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bulletin of
Duke University
1986-87

Undergraduate Instruction



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University Calendar—1986-87

Summer 1986*

March	
24	Monday—Beginning of registration for Term I and/or Term II
April	
29	Tuesday—Beginning this day, summer Drop/Add must be approved by the academic dean or director of graduate studies
30	Wednesday—Last day for payment of Term I fees without \$25 late fee (before 4:30 P.M.)
May	
8	Thursday—Term I classes begin
12	Monday—Drop/Add for Term I ends at 4:00 P.M.
June	
16	Monday—Last day for payment of Term II fees without \$25 late fee (before 4:30 P.M.)
20	Friday—Term I final examinations begin
21	Saturday—Term I final examinations end
24	Tuesday—Term II classes begin
26	Thursday—Drop/Add for Term II ends at 4:00 P.M.
August	
6	Wednesday—Term II final examinations begin
7	Thursday—Term II final examinations end

Fall 1986

August	
27	Wednesday—Orientation begins; assemblies for all new undergraduate students
September	
1	Monday, 8:00 A.M.—Labor Day, fall semester classes begin
2	Tuesday, 4:00-6:00 P.M.—Drop/Add begins, Intramural Building
3-5	Wednesday-Friday, 8:30 A.M.-12:30 P.M. and 2:00-4:00 P.M.—Drop/Add continues, 103 Allen Building
8-12	Monday-Friday, 8:30 A.M.-12:30 P.M. and 2:00-4:00 P.M.—Drop/Add continues, 103 Allen Building
October	
17	Friday—Last day for reporting midsemester grades
17	Friday, 6:00 P.M.—Fall break begins
22	Wednesday, 8:00 A.M.—Classes resume
November	
10-13	Monday-Thursday—Registration for spring semester, 1987
26	Wednesday, 12:30 P.M.—Thanksgiving recess begins
December	
1	Monday, 8:00 A.M.—Classes resume
11	Thursday, 6:00 P.M.—Fall semester classes end
12-14	Friday-Sunday—Reading period
14	Sunday—Founders' Day
15	Monday—Final examinations begin
20	Saturday—Final examinations end

Spring 1987

January	
8	Thursday—Orientation begins
9	Friday—Registration and matriculation of new undergraduate students
12	Monday, 8:00 A.M.—Spring semester classes begin
13	Tuesday, 4:00-6:00 P.M.—Drop/Add begins, Intramural Building

*The School of Forestry, the Fuqua School of Business, the Marine Laboratory, the Graduate Nursing Program, and Physical Therapy may have different starting dates during the summer; consult the appropriate bulletins and schedules.

14-16	Wednesday-Friday, 8:30 A.M.-12:30 P.M. and 2:00-4:00 P.M.—Drop/Add continues, 103 Allen Building
19-23	Monday-Friday, 8:30 A.M.-12:30 P.M. and 2:00-4:00 P.M.—Drop/Add continues, 103 Allen Building
February	
20	Friday—Last day for reporting midsemester grades
March	
6	Friday, 6:00 P.M.—Spring recess begins
16	Monday, 8:00 A.M.—Classes resume
30-31	Monday-Tuesday—Registration for fall semester, 1987 and beginning of registration for summer, 1987
April	
1	Wednesday—Registration for fall semester, 1987 and summer, 1987 continues
24	Friday, 6:00 P.M.—Spring semester classes end
25-27	Saturday-Monday—Reading period
28	Tuesday—Final examinations begin
May	
4	Monday—Final examinations end
9	Saturday—Commencement begins
10	Sunday—Graduation exercises. Conferring of degrees



University Administration

GENERAL ADMINISTRATION

H. Keith H. Brodie, M.D., *President*
Phillip A. Griffiths, Ph.D., *Provost*
William G. Anlyan, M.D., D.Sc., *Chancellor for Health Affairs*
Eugene J. McDonald, LL.M., *Senior Vice-President, Administration, and University Counsel*
William J. Griffith, A. B., *Vice-President for Student Affairs*
John J. Piva, Jr., B.A., *Vice-President for Alumni Affairs and Development*
William L. Green, Jr., A.B., *Vice-President for University Relations*
Joel L. Fleishman, LL.M., *Vice-President*
Stephen Cannada Harward, A.B., C.P.A., *Treasurer and Assistant Secretary*
J. Peyton Fuller, A.B., *Associate Vice-President and Corporate Controller*
Roger L. Marshall, A.B., *Secretary of the University*
Andrew G. Wallace, M.D., *Vice-Chancellor for Health Affairs*
Charles E. Putnam, M.D., *Vice-Chancellor for Health Affairs*
Charles Clotfelter, Ph.D., *Vice-Chancellor of the University*
Patricia C. Skarulis, M.A., *Vice-Chancellor for Information Systems*
R. James Henderson, M.Ed., *Associate Vice-President and Business Manager*

GENERAL ACADEMIC ADMINISTRATION

Phillip A. Griffiths, Ph.D., *Provost*
Craufurd Goodwin, Ph.D., *Vice-Provost for Research and Dean of the Graduate School*
Thomas A. Langford, Ph.D., *Vice-Provost for Academic Affairs*
Margaret Bates, *Vice-Provost for Academic Programs*
Judith Ruderman, Ph.D., *Director of Continuing Education*
Calvin Ward, Ph.D., *Assistant Provost for Academic Facilities and Director of the Summer Session*
Clark R. Cahow, Ph.D., *Assistant Provost and University Registrar*
Paula Burger, Ph.D., *Assistant Provost for Academic Affairs*

Trinity College, Arts and Sciences

Richard A. White, Ph.D., *Dean*
Albert F. Eldridge, Ph.D., *Associate Dean*
Virginia S. Bryan, Ph.D., *Assistant Dean and Coordinator of Institutional Research and Special Projects*
Martina J. Bryant, Ed.D., *Assistant Dean and Coordinator of College Re-Entry Programs*
Elizabeth S. Nathans, Ph.D., *Assistant Dean and Director of the Premajor Advising Center*
Mary Nijhout, Ph.D., *Assistant Dean and Director of Health Professions Advising*
Gerald L. Wilson, B.D., Ph.D., *Assistant Dean and Coordinator of the Deans' Staff*
Ellen W. Wittig, Ph.D., *Assistant Dean and Coordinator of Curriculum*
Brian Silver, Ph.D., *Assistant Dean and Adviser for Study Abroad*
Thomas D. Mann, A.B., *Assistant Dean for Administration, Arts and Sciences, Trinity College*

School of Engineering

Earl H. Dowell, Sc.D., *Dean*
Marion L. Shepard, Ph.D., *Associate Dean*

Student Affairs

William H. Willimon, M.Div., STD, *Minister to the University*
Nancy A. Ferree, M.Div., *Assistant Minister to the University*
Jane Clark Moorman, M.S.W., ACSW, *Director, Counseling and Psychological Services*
Susan L. Coon, M.A., *Director, Office of Cultural Affairs*
Brian Q. Silver, Ph.D., *Director, International House and International Adviser*
Caroline L. Lattimore, Ph.D., *Dean for Minority Affairs*
Edward S. Hill, Ph.D., *Director, Mary Lou Williams Center for Black Culture*
Patricia O'Connor, Ed.D., *Director, Placement Services*
Richard L. Cox, B.D., Ed.D., *Dean for Residential Life*
Ella E. Shore, M.A., *Associate Dean for Residential Life*
Homai McDowell, D.B.A., *Director, Office of Student Activities*
Howard J. Eisenson, M.D., *Director of Student Health*
Suzanne Wasiolek, M.H.A., *Dean for Student Life*
Jake Phelps, B.A., *Director, University Union*
Peter J. Coyle, Jr., B.A., *Associate Director, University Union*

John A. Friedrich, Ph.D., *Chairman and Professor, Health, Physical Education, and Recreation*

Jane Lloyd, M.A., *Director of Sports Clubs*

Leroy C. Skinner, M.A., *Director of Intramural Athletics*

Admissions and Financial Aid

Clark R. Cahow, Ph.D., *Interim Director of Undergraduate Admissions*

James A. Belvin, Jr., A.B., *Director of Undergraduate Financial Aid*



General Information



Duke University

In 1839 a group of citizens from Randolph and adjacent counties in North Carolina assembled in a log schoolhouse to organize support for a local academy founded a few months earlier by Brantley York. Prompted, they said, by "no small share of philanthropy and patriotism," they espoused their belief that "ignorance and error are the banes not only of religious but also civil society which rear up an almost impregnable wall between man and happiness." The Union Institute, which they then founded, was reorganized in 1851 as Normal College to train teachers, and again in 1859 as Trinity College, a liberal arts college, which later moved from the fields of Randolph County to the growing city of Durham, North Carolina. Trinity College was selected by James B. Duke as the major recipient of a fortune when, in 1924, he provided endowment funds for the university that would be organized around Trinity College and named for the Duke family.

The old Trinity College had, like almost all institutions in America at the time it was founded, been restricted to men. In 1896, Washington Duke gave an endowment with the condition that women be admitted "on equal footing with men." Thereafter, women were educated in Trinity College, and in 1930 the Woman's College was established as a separate college. Trinity College and the Woman's College continued as coordinate colleges for over forty years. To assure that women were indeed admitted "on equal footing with men," and to recognize that the education which men and women had received at Duke had long taken place in the same classrooms, the University merged these coordinate colleges in 1972 to form Trinity College of Arts and Sciences, the liberal arts undergraduate college of the University. The Bachelor of Arts and Bachelor of Science degrees may be earned in the college.

Instruction in engineering started at Normal College in 1851 and was continued at Trinity College as an option in the arts and sciences program. A Department of Engineering was established at Trinity in 1910. Following the establishment of Duke University in 1924, the Departments of Civil and Electrical Engineering were formed in 1927, and a Department of Mechanical Engineering was added four years later. The three engineering departments were joined to form the Division of Engineering as a separate administrative unit of the University. In 1939 this division was renamed the College of Engineering, which in 1966 became a professional school of engineering. The Division of Biomedical Engineering was added to the School of Engineering in 1967, and it was recognized as a department in 1971. In 1974 the name of the mechanical engineering department was changed to the Department of Mechanical Engineering and Materials Science; in 1982, the Department of Civil Engineering was renamed the Department of Civil and Environmental Engineering. All four depart-

ments offer courses leading to Bachelor of Science in Engineering, Master of Science, and Doctor of Philosophy degrees.

The School of Nursing was established in 1931 in association with the School of Medicine and Duke Hospital. From 1944 until 1957, the Bachelor of Science in Nursing Education degree was offered in cooperation with the Department of Education. A four-year program leading to the degree of Bachelor of Science in Nursing was approved by the University Board of Trustees in 1953, and in 1958 a graduate program was initiated. In 1980 the University Board of Trustees approved the phaseout of the existing undergraduate degree programs. At present, the School of Nursing offers courses leading to the Master of Science in Nursing degree. The Dean of the School of Nursing reports to the Chancellor for Health Affairs.

As the University developed around the core of undergraduate colleges and schools, the Graduate School expanded in areas of instruction and research. The School of Law of Trinity College became the Duke University School of Law, and other professional schools were established. The Divinity School was organized in 1926, the School of Medicine in 1930, the School of Forestry in 1938, and the Graduate School of Business Administration in 1969. In 1974, the School of Forestry was renamed the School of Forestry and Environmental Studies; in 1980 the business school became the Fuqua School of Business. The Graduate School itself, as distinguished from these professional schools, was organized in the 1920s. It now consists of some fifty-five departments and programs, and offers A.M., M.S., M.H.A., and Ph.D. degrees.

Duke, a privately supported, church-related (Methodist) university, has over 9,000 students enrolled in degree programs. These students represent nearly every state and many foreign countries; Duke has more than 60,000 alumni in all fifty states and in many foreign countries. The University is a member of the North Carolina Association of Independent Colleges and Universities, the Southern Association of Colleges and Schools, and the Association of American Universities.

From academy to university, some of the basic principles have remained constant. The Duke University motto, *Eruditio et Religio*, reflects a fundamental faith in the union of knowledge and religion, the advancement of learning, the defense of scholarship, the love of freedom and truth, a spirit of tolerance, and a rendering of the greatest service to the individual, the state, the nation, and the church. Through changing generations of students, the objective has been to encourage individuals to achieve, to the extent of their capacities, an understanding and appreciation of the world in which they live, their relationship to it, their opportunities, and their responsibilities.

Resources of the University

The Faculty. The University faculty, approximately 1,400 along with 1,700 adjunct and clinical faculty, maintains a tradition of personal attention to students and devotion to research. Many members of the faculty are, and have been, cited for excellence in teaching and are elected to membership in the national societies which honor those best in scholarship and research. Leaders in their disciplines and their professional organizations, they are authors of significant books and articles. Members of the faculty also act as consultants to industry, government, and foundations. To honor its outstanding faculty, the University has established more than seventy James B. Duke and other named professorships.

The Library System. The libraries of the University consist of the William R. Perkins Library and its seven branches on campus: Biology-Forestry, Chemistry, Divinity, East Campus, Engineering, Music, Mathematics-Physics; the Undergraduate Library; the Pearse Memorial Library at the Duke Marine Laboratory in Beaufort; the Fuqua School of Business Library; the Law Library; and the Medical Center Library.

In June 1985, these libraries contained approximately 3,460,000 volumes and ranked eighteenth in size among academic libraries in the United States. More than 10,000 periodicals, 14,000 serials, and 166 newspapers are received regularly. The collection includes about 7,565,000 manuscripts, 87,000 maps, 39,000 music scores, and 1,214,000 rolls or sheets of microtext.

The William R. Perkins Library. The William R. Perkins Library, the main library of the University, houses most of the books and journals in the humanities and social sciences, large files of United States federal and state documents, public documents of many European and Latin American countries, publications of European academies and learned societies, and special collections from South Asian, Far Eastern, and Slavic countries. The newspaper collection, with nearly 220,500 reels of microfilm, has several long eighteenth-century files; strong holdings of nineteenth-century New England papers; and antebellum and Civil War papers from North Carolina, South Carolina, and Virginia; as well as many European and Latin American papers. The manuscript collection of approximately seven and a half million items is particularly strong in all phases of the history, politics, and social and economic life of the South Atlantic region; it also includes significant papers in English and American literature. The rare books collection contains many scarce and valuable materials covering a broad range of fields, and the Latin and Greek manuscripts constitute one of the outstanding collections of its kind in the United States. The collection of Confederate imprints is the largest in the country.

The Undergraduate Library houses the required reading materials placed on reserve for most graduate and undergraduate courses as well as the library's audiovisual collection of films, audio and disk recordings, and video cassettes. The branch libraries serve the academic disciplines whose names they bear. The East Campus Library is primarily for undergraduate use, but it also contains the principal collections for graduate and undergraduate study in art.

Reference librarians are on duty in Perkins Library for most of the hours the library is open. Their primary responsibility is to assist patrons in making the most effective use of library collections and facilities. In addition to answering specific questions, the reference librarians also help patrons access information by identifying and explaining the use of library sources and by giving formal and informal library instruction to groups of students, faculty, or staff. Professional reference service is available to students in all other campus libraries.

Tours of the Perkins Library are given frequently during Orientation Week and upon request throughout the year. Information about other campus libraries may be obtained from the staff in each of the libraries. Handbooks about library services and facilities are also available in each of the libraries.

To protect the collections of Perkins Library for the benefit of all members of the University community, an electronic security system is in operation at the main exit. Desk attendants are stationed at the library's principal exit and are authorized to examine all books and other library materials that people leaving the library may be carrying in hands, briefcases, or bags to determine if they are properly charged. Anyone who refuses to permit books to be examined may be denied further use of the library.

The library has microfilming and copying services. The rules with regard to copyright and a schedule of fees for reproduction services are available in the library at the point of service.

The Medical Center Library. The Medical Center Library, located in the Seeley G. Mudd Communications Center and Library Building, provides the services and collections necessary to further educational, research, and clinical activities in the medical field. Services are available to the students, faculty, and staff of the School of Medicine; of the Division of Allied Health; of Duke Hospital; and of the graduate departments in the basic medical sciences. Other students and faculty needing access

to biomedical literature may apply for privileges upon application to the Head of the Circulation Department.

Over 211,000 volumes are available, including the Trent Collection in the History of Medicine. Approximately 2,650 journal subscriptions are received currently, in addition to extensive back files of older materials. The library has several types of audiovisual materials and equipment. With the exception of certain items shelved on reserve, these materials have been integrated into the general book and journal collections and are listed in the card or journal catalogs. The Frank Engel Memorial Collection consists of a small group of books on nonmedical subjects for general reading, together with several newspapers and popular magazines. Traditional reference services are supplemented by on-line bibliographic systems and computer-produced specialized indexes.

The uniform borrowing privileges apply to all registered users. Details of loan and other services may be found in the guide which is published each year and is available at the library.

The School of Law Library. The School of Law Library, with over 332,000 volumes, serves both the University and the local legal community. It features comprehensive coverage of basic Anglo-American primary source materials, including nearly all reported decisions of federal and state courts, as well as current and retrospective collections of federal and state codes and session laws. Digests, legal encyclopedias, and other indexing devices provide access to the primary documents. A large section of the library collection is devoted to treatises on all phases of law and legal sciences, as well as history, economics, government, and other social and behavioral sciences relevant to legal research. The treatises are organized in the Library of Congress classification system and are accessible through a public catalog. Special treatise collections are maintained in several subject areas, including the George C. Christie collection in jurisprudence and the Floyd S. Riddick collection of autographed senatorial material. The library is a selective depository for United States government publications, with concentration on congressional and administrative law materials. The library receives the records and briefs from the United States Supreme Court, the Fourth Circuit Court of Appeals, and the North Carolina Supreme Court and Court of Appeals. In addition to its Anglo-American holdings, the library holds substantial research collections in foreign and international law. The foreign law collection is extensive in coverage, with concentrations in European law and business law materials. The international law collection is strong in primary source and treatise material on both private and public international law topics. Undergraduate and graduate students whose course of study requires access to legal literature may use the library. However, access to the library may be restricted during certain times because of accreditation standards.

Record Library. The Department of Music has a record library separate from the university libraries with facilities for listening to records and tapes. All materials may be used in the listening room and any member of the community may borrow from the Arts Council Collection of more than 2,600 records for a nominal fee.

University Archives. The Duke University Archives, the official archival agency of the University, collects, preserves, and administers the records of the University having continuing administrative or historical value. The institutional archives, which also include published material, photographs, papers of student groups and faculty, and selected memorabilia, are available for research under controlled conditions in 341 Perkins Library.

Computation Center. Extensive computer resources are essential for a contemporary university. Computing is provided at Duke by the Duke University Computation Center (DUCC). The center presently maintains an IBM 3083 System Complex with sixteen megabytes of memory, eight IBM 3380 disk drives, eight IBM 3350 disk

drives, four IBM 3330-11 disk drives, six IBM 3420 tape drives, three IBM high-speed printers, one Xerox 8700 laser printer, a Cal-Comp digital plotter, and an IBM 2540 card reader/punch. The DUCC facility is connected by a high-speed microwave link to the Triangle Universities Computation Center (TUCC) located in the Research Triangle Park.

TUCC is a regional computer network formed and operated jointly by Duke University, North Carolina State University at Raleigh, and the University of North Carolina at Chapel Hill. The computer equipment at TUCC consists of one IBM 3081 with twenty-four million bytes of memory, one FPS-164 attached processed "super-computer," one IBM Model 168 with eight million bytes of memory, multiple 3330- and 3350-type disk facilities, thirteen tape drives, card readers, and printers. Also available is a small Hewlett-Packard 2000 access computer which provides BASIC interactive computing.

The IBM 3083 at DUCC is used mostly for administrative computing and as a high-speed link to TUCC. TUCC is used for academic, mainframe research, and instructional computing. Also connected to TUCC are four medium-speed printers located in the Engineering Building, the Biological Sciences Building, the Sociology-Psychology Building, and the West Duke Building on East Campus, as well as seven low-speed interactive terminal clusters located at various points on campus. Five clusters and two large laboratories of IBM Personal Computers are available at various locations around campus. The laboratories are housed in the Engineering Building and in North Building.

Funds for using TUCC may come from outside grants or contracts or from University funds. Several schools within the University such as Arts and Sciences and Engineering may apply for funding specifically earmarked for use at TUCC. Faculty within these schools are automatically given a TUCC account code. Graduate students in these schools may apply for a TUCC account code. Additional funds are normally available through departments. More specific information regarding Duke computing facilities may be obtained from the Director of the Computation Center.

Science Laboratories. In addition to the teaching and research laboratories in the departments of natural and social sciences and in the School of Engineering, there are other facilities in which some advanced undergraduates work on individual projects. These include the Duke University Marine Laboratory in Beaufort, North Carolina; the phytotron of the Southeastern Plant Environment Laboratories, located on the Duke campus; the Duke Forest, adjacent to the campus; the Duke University Primate Center in Duke Forest; and the Triangle Universities Nuclear Laboratory, also on the campus.

Duke as a Residential University

Duke has a long tradition as a residential university and has sought to provide for the great majority of the undergraduates convenient on-campus housing in both residence halls and apartments. While the University was established to provide a formal educational opportunity for students, Duke has always taken the position that education encompasses social and personal development as well as intellectual growth. In order to facilitate such a holistic approach, Duke seeks to provide a supportive environment substantially anchored in its residential program.

Academic, cultural, and cocurricular programming is planned and presented throughout the year in the residence halls through the cooperative work of the Office of Residential Life, Trinity College of Arts and Sciences, the School of Engineering, and resident students. There are several faculty members in residence in both freshman and upperclass houses. Faculty offices and seminar rooms are also located in several of the freshman houses. The goals of these various programs are to enhance the quality of intellectual and social life for the residents on campus, to facilitate student-

faculty interaction outside of the formal classroom, and to develop a greater sense of community within the individual residence halls as well as within the greater University.

The Undergraduate College and School

In Trinity College of Arts and Sciences and the School of Engineering, instruction is offered by University faculty who engage in research and in graduate and undergraduate teaching. Duke offers its undergraduates the opportunity to study with many internationally recognized authorities in their disciplines and with faculty members who are jointly committed to undergraduate instruction and to the advancement of knowledge. The University recognizes that students learn not only through formal lectures, but also through the interplay of ideas among faculty members and students; thus, it offers undergraduates opportunities to test their ideas against those of their professors and to observe at close range those who have committed their lives to academic careers.

The University, if it is doing its job properly, is educating citizens of the United States and of the world, not only individuals aspiring to personal fulfillment. At Duke, the men and women who earn degrees are likely to become leaders in industry, government, and the professions. They will have influence on and will be influenced by the social fabric of which they are a part. The kind of people they become will matter not only to them and their families, but also to their communities, to the United States, and to the countries of the rest of the world as well.

Amidst changing external conditions, the University cannot be sure of what knowledge and what talents will best prepare the citizens of the future for the general welfare. The chances are that the currently most lucrative professions will not remain so as new combinations of knowledge and skill become more useful to the polity which supports us all.

Trinity College of Arts and Sciences. At Duke a liberal arts education provides the variety and therefore the flexibility which can best prepare students for rich personal lives and for their role as citizens in an uncertain future. At its most successful, a liberal arts education results in an understanding of the nature of knowledge as it is reinterpreted in each generation and of how new knowledge is produced, analyzed, and synthesized in mathematics and the natural sciences, in the arts and the humanities, and in the social and behavioral sciences. In all the arts and sciences, a liberal education teaches one to analyze data and how to discern patterns within the material. A liberal education conveys sufficient information discovered by each of the major types of disciplines to serve as a base from which a person can go on to acquire new learning as changing circumstances demand. Analytical and conceptual ability along with information also enables one, in the work and reasoning of others, to distinguish the true from the false, the elegant from the shoddy, and the well-reasoned from the flashy.

A liberal arts education provides perspectives: time perspective—the realization that the present moment is bounded by and to its relation to past and future history; space perspective—the realization that a presently inhabited spot is bounded by and to its relation to other places on the globe, and indeed, the universe; cultural perspective—the realization that our present way of life is only one of many viable possibilities and is bounded by and to the different cultures of other people in the world; and artistic perspective—the realization that contemporary forms and styles in the arts are bounded by and to their past, present, and future contexts.

The capstone on our ideal education is the mastery of one subject in a major field. It serves as a prototype of what advanced knowledge in one field of inquiry is like and of the sheer joy of intellectual exploration.

School of Engineering. The undergraduate engineering program at Duke University is designed both for students who intend to become professional engineers and for those who desire a modern, general education based on the problems and the promises of a technological society. The environment in which students are educated is as important in shaping their future as their classroom experiences. In the Duke School of Engineering this environment has two major components: one is modern technology derived from the research and design activities of faculty and students in the school; the other is the liberal arts environment of the total University, with its humanitarian, social, and scientific emphases.

Engineering is not a homogeneous discipline; it requires many special talents. Some faculty members in the School of Engineering are designers; they are problem-oriented, concerned with teaching students how to solve problems—how to synthesize relevant information and ideas and apply them in a creative, feasible design. Other engineering faculty members function more typically as scientists; they are method-oriented, using the techniques of their discipline in their teaching and research to investigate various natural and artificial phenomena.

Degree Programs.



Degrees and Academic Credit

Duke University offers in Trinity College of Arts and Sciences the degrees of Bachelor of Arts and Bachelor of Science, and in the School of Engineering the degree of Bachelor of Science in Engineering. Within the curriculum of each college or school, students have the major responsibility for designing and maintaining a course program appropriate to their background and goals. They are assisted by faculty advisers, departmental Directors of Undergraduate Studies, and academic deans.

Credit toward a degree is earned in units called semester courses (s.c.), commonly abbreviated as courses. These courses ordinarily consist of three to four hours of instruction each week of the fall or spring semester or the equivalent total number of hours in a summer term. Double courses, half courses, and quarter courses are also recognized.

Trinity College of Arts and Sciences

A variety of approaches to a liberal arts education is provided by Program I and Program II. Either program leads to the Bachelor of Arts or Bachelor of Science degree and requires thirty-two semester courses. Students study in the following divisions of learning:

*Humanities.** Art, Asian and African languages (Arabic, Chinese, Hebrew, Hindi-Urdu, Japanese, Persian, and Swahili), classical studies (including Greek and Latin), comparative literature, dance, drama, English, Germanic languages and literature, Judaic studies, music, philosophy, religion, Romance languages (including French, Italian, Portuguese, and Spanish), and Slavic languages and literatures (including Russian and Polish).

Natural Sciences and Mathematics. Biology, botany, chemistry, computer science, genetics, geology, marine sciences, mathematics, physics, statistics, and zoology.

*Social Sciences.** Anthropology, economics, education, history, political science, psychology, public policy studies, and sociology.

*Afro-American studies; Canadian studies; comparative area studies; distinguished professor courses; film; human development; interdisciplinary courses; linguistics; medieval and Renaissance studies; perspectives in Marxism and society; science, technology, and human values; and women's studies include courses in more than one division. Nondivisional courses in the military sciences and in health, physical education, and recreation are also offered. In addition, advanced students in Trinity College may select a limited number of courses from among certain courses offered by the professional schools at Duke University.

PROGRAM I

Program I provides for the experience and achievement that constitute a liberal education. The ability to organize ideas and to communicate them with clarity and precision is refined by completing the writing requirement and the requirements for discussion in small groups. Knowledge of a foreign language contributes to an understanding of the nature of language itself and to perspectives on other cultures. The distribution requirements ensure learning about the concepts and analytical methods in the humanities and the arts, the social sciences, and the natural sciences. Additionally, through a course in the history of civilization students acquire knowledge of the complexity of forces that influence cultures and societies; through a course in literature they learn of the conscious products of the human intellect; and through study in an empirical natural science they gain an understanding of nature and the methods whereby humanity has reached that understanding. Students must complete the requirements listed below and explained, where necessary, on the following pages. No degree requirements, except the requirement for thirty-two course credits and the continuation requirements, may be met by a course passed under the pass/fail option unless the course is offered only on that basis.

Writing

One course in writing (page 19).

Foreign Language

Eligibility to enter the third semester of college language instruction by completing two semester courses in one language at Duke, or the equivalent (page 19).

Distribution of Courses

Students complete the requirements for a major (see pages 19, 21, 22) and in addition take approved courses in each of the following:

- In the history of civilization field: one course, if not included in the major (see pages 20, 21 for approved courses);
- In the literature field: one course, if not included in the major (see page 21 for approved courses);
- In the empirical natural science field: one course, if not included in the major (see page 21 for approved courses);

and in addition:

- In one division* outside that of the major: four semester courses, including two at the advanced level (see page 20 for excluded courses);
- In the other division* outside that of the major: two semester courses (see page 20 for excluded courses).

Small Group Learning Experiences

Courses taught for small groups (page 22), as follows:

- Before reaching junior status: at least *one* full semester course designated as a *seminar*, *tutorial*, or *independent study*; or a combination of two *preceptorials* or *discussion sections*.
- During the junior and senior years: at least *two* semester-course credits for *seminars*, *tutorials*, *independent study*, or a *thesis*.

Course Credits

Thirty-two semester-course credits (no more than two with a grade of D), including (page 22):

*For the subjects in each division of learning, see page 17.

- At least sixteen at Duke (ordinarily including the senior year).
- *At least* nineteen outside the major department.
- *No more* than seventeen total for a Bachelor of Arts major and no more than nineteen total for a Bachelor of Science major.
- *At least* twelve at the advanced level.
- *No more* than: one credit of physical education activity and dance activity (i.e., two half-credit activity courses), two credits for house courses (i.e., four half-credit house courses), six from a professional school (e.g., business, engineering, medicine), and four in military science.

Quality of Work

All passing grades are expected, but see pages 24 and 25 for minimum continuation requirements.

Writing. Students are required to demonstrate ability to write effective English prose by completing a course in expository writing, ordinarily University Writing Course 4, 5, 6, or 7. See the section University Writing Program in the chapter "Courses of Instruction."

Foreign Language. This requirement to assure that students have some knowledge of a foreign culture may be met in any of the following ways: (1) by passing one of the following courses: Amharic 14; Arabic 2; Chinese 2; French 2, 12, 181; German 2, 14, 181; Greek 2, 10, 12, 181S; Hebrew 2; Hindi-Urdu 2; Italian 2, 181; Japanese 2; Latin 2, 181S; Persian 2; Polish 12; Portuguese 181; Religion 116 (Hebrew); Russian 2, 14; Spanish 2, 12, 14, 181; Swahili 2, 14; Yiddish 181; (2) by presenting a College Board Advanced Placement Score of 4 or 5, or score of 3 validated by satisfactory completion of an advanced course; or (3) by achieving a score on a College Board Achievement Test or College Board Placement Test sufficient to permit enrollment at the intermediate level of foreign language instruction (see the chapter "Academic Procedures and Information").

Students whose native language is not English may meet the requirement by successful completion of a course in English composition. Transfer students may satisfy the requirement in any of the above ways or by having fulfilled the foreign language graduation requirement at another college or university prior to entering Duke. Students who have knowledge of a foreign language other than those for which College Board tests are available may request to be examined in that language by special arrangement after matriculation.

Distribution of Courses. Students achieve breadth and balance of intellectual experience by taking courses in each of the three divisions of learning (the humanities, natural sciences, and social sciences, see page 17) and by taking in addition an approved course in each of three selected fields (history of civilization, literature, and empirical natural sciences). Courses that satisfy these requirements consist of the essential subject matter and substance of the discipline. Courses that satisfy the requirements for small group learning experiences may be used also to satisfy these requirements. Courses taken on the pass/fail basis, however, do not satisfy these requirements unless offered only on the pass/fail basis.

Divisions of Learning. Students must complete a certain number of *nonskills* courses in each of the three divisions (see table below):

First Division. The division of the major is called the first division. Each student must complete requirements for a major in a single discipline or in an interdisciplinary program. Thereby the requirement for the first division will automatically be satisfied. See the sections on major below, in the chapter "Academic Procedures and Information," and also the section on the major following each department's course descriptions.

Second Division. Each student must pass at least four semester courses in a second division of the student's choice. At least two of the four courses must be at the 100 or 200 level.

Third Division. Each student must pass at least two semester courses in the remaining division.

COURSES THAT DO NOT SATISFY THE DIVISIONAL DISTRIBUTION REQUIREMENTS—Military and Naval Science Courses, Aerospace Studies Courses, Courses in the Professional Schools, Physical Education Courses, and also the Following Skills Courses:

Amharic	14
Arabic	1, 2, 11, 12, 13, 14, 63, 64
Art	53, 54, 56
Chinese	1, 2, 63, 64
Dance	134 and activity courses
Drama	71, 101, 161, 167, 177
English	3, 12, 28S, 61S, 62S, 71, 72, 73S, 74, 101S
French	1-2, 12, 63, 76, 181
German	1-2, 14, 63, 105, 181, 182
Greek	1-2, 10, 11-12, 181
Hebrew	1, 2, 63, 64
Hindi-Urdu	1, 2, 63, 64
Italian	1-2, 63, 181
Japanese	1, 2, 63, 64
Latin	1-2, 181
Mathematics	9-10, 19
Music	applied music (except for tutorials)
Persian	1, 2, 63, 64
Polish	11, 12
Political Science	138, 236
Portuguese	181
Psychology	117
Religion	115-116
Russian	1, 2, 14, 63, 64
Sociology	132, 133
Spanish	1-2, 12, 14, 63, 76, 181
Swahili	1, 2, 14, 63, 64
University Writing	4, 5, 6, 7
Yiddish	181
Zoology	49S, 196D

Fields of Knowledge. In addition to fulfilling the divisional requirements, students must pass one course from each of the following three lists:

COURSES THAT SATISFY THE REQUIREMENTS IN HISTORY OF CIVILIZATION, LITERATURE, AND EMPIRICAL NATURAL SCIENCE

I. History of Civilization*

Afro-American Studies	56, 145, 146
Anthropology	115, 120, 121, 122, 123, 124, 126, 127, 128, 130, 131, 133, 134, 147, 148, 168
Art	69, 70, 125, 131, 132, 133, 134, 140, 141, 142, 143, 145, 147, 148, 149, 151, 152, 153, 161, 186, 189
Classical Studies	11S, 12S, 53, 54, 125, 126, 133, 134, 135, 137, 144, 155
Economics	132, 150, 184
French	136, 139
German	129, 130
History	21, 21S, 22, 22S, 23, 25, 26, 49S, 53, 54, 75, 76, 91, 91S, 92, 92S, 93S, 95, 96, 101G, 101K, 102G, 104, 105, 106, 107, 108, 111, 112, 113, 114, 115, 116, 117, 120, 121, 122, 123, 124S, 125, 126, 128, 129, 130, 131, 132, 133, 134, 135, 136, 138, 139, 141, 142, 143, 144, 145, 146, 149, 150S, 151, 156, 157, 158, 160, 161, 162, 168S, 171, 173, 174, 180, 182, 183S, 184

*These courses explore the interrelationships of major social, political, economic, cultural, and intellectual developments.

Interdisciplinary Courses	101, 102, 103, 162, 163, 184
Music	119, 138
Philosophy	93, 94, 108, 117, 119, 120, 132, 138, 139
Political Science	115, 131, 135, 136, 151, 161, 163, 184, 187
Religion	51, 56, 57, 109, 124, 125, 133, 160, 161, 162, 163
Sociology	111, 138, 170, 180, 184

II. Literature

Afro-American Studies	173, 174
Arabic	171
Chinese	135, 136, 141S, 142, 171
Classical Studies	63, 64, 119
Comparative Literature	100, 120, 121, 124, 125, 131, 132, 135, 139, 145, 150, 159, 160, 169, 170, 180
Distinguished Professor Courses	201, 203, 205
Drama	55, 64, 115, 116, 117, 118, 119, 120, 121, 122, 123, 125, 155
English	20, 21S, 22S, 23S, 24S, 25S, 26S, 49S, 51, 52, 91, 93, 121, 122, 123, 124, 125, 126, 127, 128, 131, 133, 135, 136, 137, 138, 139S, 141, 143, 144, 145, 151, 152, 153, 154, 155, 161, 162, 163, 164, 165, 167, 168, 169S, 171, 173, 175, 179S, 182, 183, 184, 186, 187, 221, 225, 235, 241, 245, 251, 263, 267, 269, 275
French	101, 102, 103S, 104S, 141S, 142S, 145S, 146S, 147, 148, 151, 152, 153, 155, 156, 158, 162S, 163, 166S, 167S, 170, 248, 251, 252, 255, 256, 257, 258, 261, 263, 265, 266, 290S
German	101, 103S, 104S, 109S, 115S, 125, 126S, 127S, 131, 132, 172, 173, 201S, 202S, 205, 206, 207S, 209S, 211S, 214S, 215S, 217S, 230S
Greek	63, 64, 103S, 104S, 203, 205, 206, 209, 210, 221, 222
Italian	183, 184, 283, 284, 285
Japanese	155, 156, 161
Latin	63, 64, 103S, 104S, 105S, 112S, 117, 151S, 153S, 201, 203, 204, 210, 221
Philosophy	108
Polish	174
Political Science	174
Portuguese	182
Religion	50, 52, 55, 106, 108, 128, 147, 172, 188, 233, 287
Slavic Languages and Literatures	124, 161, 162, 175, 176, 177, 183
Spanish	101, 102, 103S, 104S, 105, 106, 107S, 108S, 121, 123S, 141S, 142S, 146, 151, 153, 157, 162, 163, 165S, 166, 171, 245, 246, 253, 254, 258S, 275, 276, 277
Yiddish	171

III. Empirical Natural Science

Unless classified as a Skills Course, any course offered by the natural science departments (botany, chemistry, geology, physics, zoology) which carries one semester-course credit or more satisfies this requirement.

Major. Students are expected to acquire some mastery of a particular discipline or interdisciplinary area as well as to achieve a breadth of intellectual experience. They therefore complete a departmental major, an interdisciplinary major, or an interdepartmental concentration. At least half the courses for a student's major field must be taken at Duke although departments may make exceptions to this rule in special circumstances. A student who completes requirements for two majors may have both recorded on the official record. See the chapter "Academic Procedures and Information" for the majors within each degree and for procedures on declaring a major.

Departmental Major. The courses for a departmental major may include introductory or basic prerequisite courses and higher-level courses in the major department or in the major department and related departments. The courses required in the major department must include at least five beyond the introductory or basic prerequisite level, but may not exceed eight semester course credits for the Bachelor of Arts degree or ten for the Bachelor of Science degree. Students may elect a more intensive major program, but only thirteen courses in one department count toward the graduation requirement of thirty-two semester courses. Furthermore, the total number of

courses at any level in the major and in related departments may not exceed seventeen semester courses for the Bachelor of Arts degree and nineteen semester courses for the Bachelor of Science degree. The courses required for a major are specified by the department. The requirements appear in the section following each department's course descriptions.

Interdisciplinary Major. Students may satisfy the requirement by completing work prescribed for a major in an approved program. These programs include Afro-American studies, biology, Canadian studies, comparative area studies, comparative literature, drama, and medieval and Renaissance studies. The requirements for an interdisciplinary major appear under each program in the chapter "Courses of Instruction."

Interdepartmental Concentration. A student may pursue an interdepartmental major program designed by the student and advisers as an alternate means of satisfying the major requirement. An interdepartmental concentration consists of at least three courses beyond the introductory level in each of two or more departments. For procedures see the section on declaration of major or division in the chapter "Academic Procedures and Information."

Small Group Learning Experiences. By supplementing the classroom and lecture methods of instruction, small group learning experience courses assure students opportunities to engage in discussion, develop skills, refine judgment, and defend ideas when challenged. A *seminar* (ordinarily indicated by the suffix S) is an independent course of twelve to fifteen (exceptionally to twenty) students who, together with an instructor, engage in disciplined discussion. The number of meeting hours per term is the same as for regular courses of equivalent credit. Instructors are encouraged to present to each student at the end of the term a written evaluation of the student's work. A *discussion section* (D) is a group of approximately ten students and an instructor, in which discussion is the paramount characteristic; it is an integral part of a larger regular course, and every member of the class is enrolled. A *preceptorial* (P) is a group of usually no more than twelve students and an instructor in which discussion is the primary component; it is an additional and optional unit attached to a regular course involving one or more extra meetings per week. No additional course credit is given for a preceptorial. A *tutorial* (T) is a group of one to five students and an instructor meeting for discussion which is independent of any other course. For *independent study* students pursue their own interests in reading, research, or writing, but meet with an instructor for guidance and discussion. See the section on independent study in the chapter "Academic Procedures and Information." Instructors in all courses that satisfy the requirements for small group learning experiences, including independent study, must meet with the students at least once every two weeks. The requirements for small group learning experiences are listed under Program I, above.


Course Requirements. Thirty-two semester courses are required for graduation, including a maximum of two courses passed with a grade of D. At least sixteen courses, including the work of the senior year, must be passed at Duke. Twelve courses must be at the advanced (100-200) level. The thirty-two course credits may include (1) no more than thirteen courses in one department; (2) no more than seventeen total for a major under the Bachelor of Arts degree and no more than nineteen total for a major under the Bachelor of Science degree; (3) no more than one semester-course credit in physical education activity and dance activity (i.e., a total of two half-credit activity courses); (4) no more than two credits for house courses; (5) no more than six credits for courses taken in professional schools; and (6) no more than four semester-course credits in military science. Certain military science courses listed as carrying credit do not count toward graduation but appear on a student's permanent academic record. Military science courses, like professional school and all physical education courses, do not satisfy distribution or fields of knowledge requirements.



Residence. A residence period of eight semesters is the typical amount of time a student may take to earn either the Bachelor of Arts or the Bachelor of Science degree. This period may be extended for one or two semesters by a student's academic dean for legitimate reasons, if it seems probable that an extension will enable the student to complete all remaining requirements for graduation. A student will not be permitted residence of more than ten semesters in order to be graduated.

For the minimum residence period, at least sixteen courses must be satisfactorily completed at Duke, including the courses needed to meet the senior year residence requirement. (For the purposes of the residence requirement, advanced placement credits are *not* considered as courses taken at Duke.) If only sixteen courses are taken at Duke, they must include the student's last eight courses. A student with more than sixteen courses at Duke may take two of the last eight courses at another approved institution. A student who has completed twenty-four courses at Duke may take four of the last eight courses at another approved institution. Courses taken elsewhere must be approved in advance by the appropriate Director of Undergraduate Studies and the student's academic dean.

Former students of Trinity College or the Woman's College who have been out of college for at least six years may, with certain provisos, take up to eight semester courses in another institution of approved standing in final fulfillment of graduation requirements. Further information can be obtained from the Associate Dean of Trinity College of Arts and Sciences.

 **Quality of Work (Continuation Requirements).** A student must achieve a satisfactory record of academic performance each term and make satisfactory progress toward graduation each year to continue enrollment in college. A student who fails to meet the minimum requirements described below must leave college for at least two semesters; a summer session may be counted as a semester. The student may apply to the Associate Dean of Trinity College of Arts and Sciences for readmission. If, after readmission, the student again fails to meet continuation requirements, the student will be ineligible, except in extraordinary instances, for readmission to Trinity College.

Satisfactory Performance Each Term. A student who does not receive a passing grade in all courses must meet the following minimum requirements or be withdrawn from the college.

In the Fall or Spring Semester: (1) in the first semester of enrollment at Duke, a student with a normal course load (of at least four semester courses, as defined in the chapter "Academic Procedures and Information") may not fail more than two courses; (2) after the first semester at Duke, a student with four or more courses may not fail more than one course; (3) a first-semester student, whether a freshman or a transfer student, who for a special reason has received permission from an academic dean to enroll in fewer than four courses may not fail more than one course; (4) a student taking an authorized underload after the first semester at Duke must earn all passing grades. (Students may not carry an underload without the permission of their academic dean.) For the purposes of continuation, incomplete work in any course is considered a failure to achieve satisfactory performance in that course. Therefore, where continuation is in question, incomplete work in any course must be completed with a passing grade in time for final grades to be submitted to the Office of the Registrar no later than the weekday preceding the first day of classes of the spring semester, or prior to the first day of classes of the second term of the summer session, as appropriate. In the case of incomplete work in the spring semester, this requirement applies whether or not the student plans to attend one or more terms of the summer session. The student, however, may not enroll in a summer term at Duke unless the requirement of satisfactory performance each semester has been satisfied.

In the Summer Session: to maintain enrollment at Duke a student may not fail more than one course in a summer term or a summer session; moreover, a student may not have a failing grade in addition to an incomplete grade in the preceding spring. For purposes of continuation, incomplete work is considered failure to achieve a satisfactory performance in that course. Therefore, when eligibility to continue from the summer session to the fall is in question, incomplete courses must be satisfactorily completed in time for a passing grade to be submitted to the Office of the Registrar no later than the weekday preceding the first day of fall classes. (No student may enter the fall semester with any combination of *F* or *I* grades from the preceding spring and summer.)

Any student excluded from the college under the provisions of these regulations may on request have the case reviewed by the Associate Dean of Trinity College of Arts and Sciences.

Satisfactory Progress toward Graduation. Each year prior to the beginning of fall term classes, a student must have made satisfactory progress toward fulfillment of curricular requirements to be eligible to continue in the college; i.e., a certain number of courses must have been passed *at Duke* according to the following schedule:

<i>To be eligible to continue to the:</i>	<i>A student must have passed at Duke:</i>
3rd semester	6 semester courses
4th semester	10 semester courses
5th semester	14 semester courses
6th semester	18 semester courses
7th semester	22 semester courses
8th semester	26 semester courses

Courses in the arts and sciences taken in the summer terms *at Duke* may be used to meet this requirement; advanced placement may *not* be used to satisfy it. No more than two courses completed with *D* grades may be counted toward fulfilling this annual continuation requirement.

PROGRAM II

Nature and Purpose. Program II is an alternate approach leading to either the Bachelor of Arts or the Bachelor of Science degree which offers the student who has an unusual interest or talent in a single field, or an unusual combination of interests or talents in several fields, an opportunity to plan and carry out a special curriculum adapted to these interests and needs. The student, with the assistance of a departmental Program II adviser, designs an individual plan of study for the whole or the remainder of the student's college career. Together, they assess the student's background, needs, and ambitions and evaluate the resources at the University or outside it as means of satisfying those ambitions. They consider what academic courses would be useful and also take into account that a term of independent study or work/study on or off campus, or a period of study abroad, might be appropriate. Each curriculum is tailored to the special interests and talents of the student for whom it is designed. Among the many topics for Program II have been American studies, primatology, dramatic literacy, linguistics, biochemistry, mariculture, behavioral science, environmental policy, modern thought, and mass communications.

Admission. Students interested in Program II should confer with the Directors of Undergraduate Studies in the departments closest to their interests, with the dean responsible for Program II, and with the Chairman of the Committee on Program II, whose name may be obtained from 110 Allen Building. If the student seems eligible for Program II, the Director or other departmental adviser, or an interdepartmental committee, will counsel the student concerning the design of the curriculum. When an interdepartmental committee is needed, one department will bear administrative responsibility. The curriculum must be approved by the department and also by the

Committee on Program II of the Undergraduate Faculty Council of Arts and Sciences. Upon endorsement by that committee, the program becomes an obligation assumed by the student although it may be modified later with the approval of the department and the Committee on Program II. A description of the plan is sent to the academic dean responsible for Program II, and each semester the student's progress in achieving the plan is reviewed.

Until formally accepted into Program II, a student should register for courses to satisfy the curricular requirements of Program I. Upon acceptance into Program II, a student is relieved of most, but not all, requirements expected of Program I students. Should Program II be dropped for any reason, the student assumes all requirements of Program I. Ordinarily, students will be accepted into Program II only after their first semester at Duke; they are ineligible to apply for admission to Program II after their junior year. Further information about Program II may be obtained from the office of the academic dean responsible for Program II, in 110 Allen Building.

General Requirements. Apart from the requirements arising from the approved plan of work, a Program II student must satisfy certain general requirements: thirty-two semester-course credits for graduation; the regulations on military science courses; and residence, although the requirements relating to the last eight courses may be adjusted to suit the student's approved plan of work. Graduation with distinction is available for qualified students in Program II. See the section on honors in the chapter "Academic Procedures and Information."

COMBINATION PROGRAMS OF TRINITY COLLEGE AND DUKE PROFESSIONAL SCHOOLS

A student interested in attending a Duke professional school (business, forestry and environmental studies, law, and medicine) may, upon meeting certain requirements, combine the senior year in Trinity College of Arts and Sciences with the first year in the professional school. To qualify the student must (1) successfully complete twenty-four semester courses in Trinity College; (2) fulfill all other degree requirements in Trinity College except for eight elective courses; (3) obtain the approval of the appropriate preprofessional adviser and academic dean in Trinity College; and (4) be admitted to the professional school. If the student's application to the professional school is accepted, the student transfers to the professional school for the fourth year and begins work on the professional degree. Upon successful completion of the work in the first year of the professional school, the baccalaureate degree is awarded to the student. The undergraduate record notes the student's enrollment in the combination program, the name of the professional school, the date of graduation from Trinity College, and the degree awarded, but it does not include courses taken in the professional school. Counseling and additional information are available from the preprofessional advisers.

PREPARATION FOR GRADUATE AND PROFESSIONAL SCHOOLS

Students planning to enter a graduate or professional school should consult their academic deans and faculty advisers at the earliest opportunity. Since many graduate and professional schools require special tests for students seeking admission, information regarding requirements should also be obtained from the catalogs of the appropriate schools. The Office of Counseling and Psychological Services will provide applications for the testing programs.

Graduate Schools of Arts and Sciences. As soon as practicable, students should ascertain the requirements of the graduate schools which they are considering and should consult an adviser in the field of the proposed advanced study. Most graduate

schools have requirements in foreign languages, and candidates for the degree of Doctor of Philosophy may be required to pass reading examinations, usually in German and French.

Graduate Schools of Engineering. Students interested in graduate work in engineering should consult the Dean of the School of Engineering or the Director of Graduate Studies in one of the engineering departments. Most engineering graduate schools require that a candidate have the equivalent of a Bachelor of Science in Engineering degree; however, students in the natural and social sciences may obtain conditional admission if they have a sufficient background in mathematics.

Graduate Schools of Business Administration. Students seeking advice concerning preparation for graduate school in business administration should consult the adviser for graduate business programs in Trinity College. Many graduate programs in business administration are designed specifically for students with little or no undergraduate work in business. In general, a student should seek a good liberal arts background, which will help develop communication skills, analytical skills, and an understanding of human nature. Students have often chosen such courses as Computer Science 51, Economics 1 and 2 (or 51 and 52), Management Sciences 53, or Mathematics 31 as those which develop analytical skills. For further information concerning undergraduate preparation see the *Duke Prebusiness Handbook* or the *Official Guide to MBA Programs, Admissions, and Careers* book published by the Graduate Management Admission Council; these publications and other resource materials are available in the office of the prebusiness adviser in the college.

Medical and Dental Schools. Students planning to enter schools of medicine, dentistry, or veterinary medicine can prepare for admission by completing any of the regular departmental majors in Program I or by completing Program II, and by taking those courses required by the professional schools of their choice. Virtually all medical schools and most schools of dentistry and veterinary medicine require the same basic group of college premedical courses—a year of biology, a year each of inorganic and organic chemistry, and a year of general physics. In addition, many schools require a year of English and courses in the humanities or social sciences. About a third of all medical schools now require a year of calculus and some suggest courses in statistics. For a complete listing of these and other requirements set by each medical school, see *Medical School Admission Requirements*, published annually by the Association of American Medical Colleges. Current copies, as well as information concerning careers in dentistry, veterinary medicine, osteopathic medicine, optometry, and many allied health professions, are available in the Office of the Adviser for the Health Professions. Students should discuss their programs of study with their major advisers, academic deans, and with the adviser for the health professions.

Law Schools. Students who plan to prepare for law school should seek diversity in their undergraduate course programs and specialize in one or more areas. They may choose virtually any field for their major work. Although no specific courses are required, prelaw students have often chosen from the following courses: Management Sciences 53; Economics 51, 52; English 91; History 21, 22, 91, 92, 105, 106; Philosophy 41, 48; Political Science 91; Public Policy Studies 55; Sociology 10D.

For a fuller discussion of undergraduate preparation for the study of law, students should refer to the *Duke Prelaw Handbook* or the *Prelaw Handbook* published by the Association of American Law Schools and the Law School Admission Council, or consult with the prelaw adviser in the college.

Theological Schools and Religious Work. Students contemplating theological study should correspond at the earliest opportunity with the appropriate schools and with the authorities of their churches to learn how to prepare for the specific

programs they expect to enter. Probably, they will find that they should consider the following subjects: English language and literature; history, including non-Western cultures as well as European and American; philosophy, particularly its history and its methods; natural sciences, both the physical and the life sciences; psychology, sociology, and anthropology; the fine arts and music; biblical and modern languages; religion, both in the Judaeo-Christian and in the Near and Far Eastern traditions. Some seminaries require Greek or Hebrew for admission. It is the understanding gained in these fields rather than the total number of credits or semester hours earned which is significant. More detailed information about theological education, not limited to Duke, may be obtained from the Director of Admissions of the Divinity School.

The School of Engineering

Duke University offers in the School of Engineering programs of study which lead to the degree of Bachelor of Science in Engineering. Four programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). These programs are biomedical engineering, civil engineering, electrical engineering, and mechanical engineering. These accredited programs, and special programs of study in interdisciplinary fields, are offered by the Departments of Biomedical Engineering, Civil and Environmental Engineering, Electrical Engineering, and Mechanical Engineering and Materials Science.

For graduation with a Bachelor of Science in Engineering degree, a student must complete successfully a minimum of thirty-two semester courses. These thirty-two semester courses must include the following:

General Requirements*

Writing	1 s.c.	This requirement is met by completing a University Writing Course.
Mathematics	4 s.c.	This requirement is met by completing Mathematics 31†, 32†, and 103; plus 104 or 111 or 135.
Natural Science.....	4 s.c.	This requirement is met by completing Chemistry 11, Physics 51 and 52, and an elective course in one of the natural science departments which presents fundamental knowledge about nature and its phenomena, preferably including quantitative expression.‡
Social Sciences and Humanities	4 s.c.	This requirement is met by completion of four courses from at least two departments, one in the humanities and one in social sciences. This program of courses should reflect a rationale or fulfill an objective appropriate to the engineering profession. Courses selected must be those which present essential subject matter and substance of the discipline; for example, no introductory skill courses may be used to satisfy this requirement. Likewise, courses devoted primarily to subjects such as accounting, management science, industrial management, finance, personnel administration, introductory language, and ROTC normally do not fulfill this objective regardless of their general value in the total engineering curriculum. Courses taught in professional schools may not be used to satisfy this requirement.

*House courses cannot be used to meet Bachelor of Science in Engineering degree requirements.

†Mathematics 33 and 34 are acceptable in lieu of Mathematics 31 and 32.

‡Courses in mathematics, statistics, and computer science will not meet this requirement.

Engineering and
Applied Sciences. 4 s.c.

This requirement is met by completion of one course from each of four of the following six areas: electrical science, information and computer science, mechanics (solid and fluid), materials science, systems analysis, and thermal science and transfer processes. See departmental requirements, which follow, for any specific courses to be included.

Digital Computation.

Students are expected to have acquired digital-computer programming capability before their sophomore year. The programming capability may be satisfied by prior experience or by passing Engineering 51, Engineering 52, or Computer Science 51.

Departmental Requirements

Departmental
Specifications 15 s.c.

The department administering the major field of study will specify this requirement. In general, it will consist of both required courses and electives to be planned in consultation with the departmental adviser. Including the 4 s.c. in engineering and applied sciences listed under general requirements, a total of 8 s.c. equivalents in engineering science and 4 s.c. equivalents in engineering design are required. See the individual departmental requirements, which follow.

§Total Minimum
Requirement 32 s.c.

§A maximum of two semester courses of junior or senior level air science, military science, or naval science course work may be counted in satisfying the minimum requirements of thirty-two semester courses for a baccalaureate degree in engineering. These courses must be included in the fifteen semester courses listed under departmental requirements. All other courses completed in air, military, or naval science are taken in addition to the minimum program.

Biomedical Engineering Departmental Requirements

All general requirements and departmental requirements comprising the accredited biomedical engineering major are incorporated in the following sequence, only one of several possible sequences. The student is encouraged to choose electives and select a sequence which develops broad intellectual interests.

Freshman Year

First Semester	Courses	Second Semester	Courses
Chemistry 11.	1	Chemistry 12.	1
University Writing Course.	1	Physics 51	1
Mathematics 31.	1	Mathematics 32.	1
Engineering 51 or Social Science or Humanities Elective	<u>1</u>	Social Science or Humanities Elective or Engineering 51	<u>1</u>
	4		4

Sophomore Year

First Semester	Courses	Second Semester	Courses
Physics 52	1	Biomedical Engineering 163.	1
Electrical Engineering 61	1	Elective	1
Mathematics 103.	1	Mathematics 111.	1
Social Science or Humanities Elective.	<u>1</u>	Social Science or Humanities Elective.	<u>1</u>
	4		4

Junior Year

First Semester	Courses	Second Semester	Courses
Biomedical Engineering 110.	1	Biomedical Engineering Elective	1
Biomedical Engineering 101.	1	Life Science Elective	1
Engineering 135 or Mechanical Engineering 126 or Biomedical Engineering 202	1	Biomedical Engineering 164.	1
Biomedical Engineering 132.	<u>1</u>	Electrical Engineering 132 or Biomedical Engineering 171	<u>1</u>
	4		4

Senior Year

First Semester	Courses	Second Semester	Courses
Biomedical Engineering Elective	1	Biomedical Engineering Elective	1
Life Science Elective	1	Elective	1
Social Science or Humanities Elective.....	1	Elective	1
Elective	<u>1</u>	Elective	<u>1</u>
	4		4

Premedical students should schedule Chemistry 151, 152, and two life science electives before the end of their junior year by deferring some required courses to the senior year. Biomedical engineering electives include all courses with biomedical engineering numbers other than required courses. Engineering 83 is also counted as a biomedical engineering elective.

Civil And Environmental Engineering Departmental Requirements

The general requirements and departmental requirements comprising the accredited civil engineering major are all incorporated in the following typical program.

Freshman Year

First Semester	Courses	Second Semester	Courses
Chemistry 11.....	1	Engineering 24	1
Mathematics 31.....	1	Mathematics 32.....	1
University Writing Course.....	1	Physics 51	1
Engineering 51 or 52 or Social Science-Humanities Elective.....	<u>1</u>	Social Science-Humanities Elective or Engineering 51 or 52.....	<u>1</u>
	4		4

Sophomore Year

First Semester	Courses	Second Semester	Courses
Engineering 75	1	Engineering 123	½
Mathematics 103.....	1	Mathematics 111.....	½
Physics 52	1	Natural Science Elective.....	1
Social Science-Humanities Elective.....	<u>1</u>	Elective	<u>1</u>
	4		4

Junior Year

First Semester	Courses	Second Semester	Courses
Civil Engineering 122.....	1	*Civil Engineering Elective	1
Civil Engineering 131.....	1	*Civil Engineering Elective	1
Social Science-Humanities Elective.....	1	Social Science-Humanities Elective.....	1
Elective	<u>1</u>	Elective	<u>1</u>
	4		4

Senior Year

First Semester	Courses	Second Semester	Courses
**Civil Engineering Design Elective	1	**Civil Engineering Design Elective	1
*Civil Engineering Elective	1	*Civil Engineering Elective	1
*Civil Engineering Elective	1	Elective	1
Elective	<u>1</u>	Elective	<u>1</u>
	4		4

*These courses shall be chosen from the following: Civil Engineering 123, 124, 133, 134, 139, 116, 150.

**These courses shall be chosen from Civil Engineering 232, 233, 234, 235, 246, 248, 282.

In order to satisfy the School of Engineering distributional requirements of four courses in engineering and applied science, the student must take at least one course from the following: Engineering 83, Electrical Engineering 61, or Engineering 151.

Electrical Engineering Departmental Requirements

The general requirements and departmental requirements comprising the accredited electrical engineering major are all incorporated in the following program.

This program is presented as a guide to assist students in planning their four-year program and should not be viewed as an inflexible sequencing of courses.

Freshman Year

First Semester	Courses	Second Semester	Courses
Mathematics 31.....	1	Mathematics 32.....	1
Chemistry 11.....	1	Physics 51.....	1
University Writing Course.....	1	Approved Elective.....	1
Engineering 51 or Computer Science 51 or Social Science-Humanities Elective.....	<u>1</u>	Engineering 51 or Computer Science 51 or Social Science-Humanities Elective.....	<u>1</u>
	4		4

Sophomore Year

First Semester	Courses	Second Semester	Courses
Electrical Engineering 61.....	1	Electrical Engineering 62.....	1
Mathematics 103.....	1	Electrical Engineering 112.....	1
Physics 52.....	1	Mathematics 104, 111, or 135.....	1
Social Science-Humanities Elective.....	<u>1</u>	Social Science-Humanities Elective.....	<u>1</u>
	4		4

Junior Year

First Semester	Courses	Second Semester	Courses
†Electrical Engineering.....	1	†Electrical Engineering.....	1
†Electrical Engineering.....	1	†Electrical Engineering.....	1
‡Mathematics.....	1	§Natural Science.....	1
Social Science-Humanities Elective.....	<u>1</u>	Approved Elective.....	<u>1</u>
	4		4

Senior Year

First Semester	Courses	Second Semester	Courses
Approved Electrical Engineering Elective.....	1	Approved Electrical Engineering Elective.....	1
Approved Elective.....	1	Approved Elective.....	1
Approved Elective.....	1	Approved Elective.....	1
Approved Elective.....	<u>1</u>	Approved Elective.....	<u>1</u>
	4		4

†These four courses must be chosen from the following: Electrical Engineering 103, 143, 157, 161, 186, 199.

‡Any 100-level math course except 123, 128, or 183.

§One of the following: Chemistry 12; Physics 105, 161, 176S, 181, and 185; Biology 14 is recommended.

Note: The selection of approved electives should take into account a departmental requirement that a student must have accumulated by graduation time the equivalent of *four* (4) engineering design and *eight* (8) engineering science courses.

In order to satisfy the School of Engineering distributional requirement of four courses in engineering and applied science, the student may use Electrical Engineering 61 as an electrical science course and Electrical Engineering 112 as a systems analysis course. The remaining two courses may be selected from any two of the following areas: information and computer science (Engineering 51 or Computer Science 51 may be used to satisfy this requirement), mechanics, materials science, and thermal sciences.

An up-to-date list of acceptable *engineering design* and *engineering science* courses may be secured through the departmental office.

Mechanical Engineering and Materials Science Departmental Requirements

The general requirements and departmental requirements comprising the accredited mechanical engineering major are all incorporated in the following typical program.

Freshman Year

First Semester	Courses	Second Semester	Courses
Mathematics 31.....	1	Mathematics 32.....	1
Chemistry 11.....	1	Physics 51.....	1
University Writing Course.....	1	*Engineering 83.....	1
Engineering 51 or		†Approved Elective or	
Social Science-Humanities Elective.....	<u>1</u>	Engineering 51.....	<u>1</u>
	4		4

Sophomore Year

First Semester	Courses	Second Semester	Courses
Mathematics 103.....	1	Mathematics 111.....	1
Physics 52.....	1	*Engineering 123.....	1
*Engineering 75.....	1	Engineering 130† or 101§.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

Junior Year

First Semester	Courses	Second Semester	Courses
*Engineering 101† or 130§.....	1	Mechanical Engineering 115† or 140§.....	1
Mechanical Engineering 140† or 115§.....	1	Mechanical Engineering 141† or 150§.....	1
†Approved Elective†		Mechanical Engineering 126†	
or Mechanical Engineering 126§.....	1	or Approved Elective†.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

Senior Year

First Semester	Courses	Second Semester	Courses
Mechanical Engineering 150† or 141§.....	1	#Advanced Technical Elective.....	1
#Advanced Technical Elective.....	1	#Advanced Technical Elective.....	1
#Advanced Technical Elective.....	1	†Approved Elective.....	1
†Approved Elective.....	<u>1</u>	†Approved Elective.....	<u>1</u>
	4		4

*The four courses in engineering and applied science must be Engineering 75, 83, 101, and 123.

†Part of a program of approved elective courses planned with the student's faculty adviser to suit individual interests and abilities. The program must include a minimum of five social science-humanities courses and one natural science course.

‡Designates sequence A, part of a program of core courses in mechanical engineering which should be taken in this designated sequence or the one which follows.

§Designates sequence B, part of a program of core courses in mechanical engineering which should be taken in this designated sequence or the one preceding.

#Part of a program of four advanced courses which normally build upon engineering courses required in the curriculum. Two of these electives must be in mechanical engineering. A current list of courses satisfying this requirement is maintained by faculty advisers.

The major requirements are included in the minimum total of thirty-two courses listed under general requirements and departmental requirements. Specific courses which must be included are Engineering 75, 83, 101, 123, and 130; Mechanical Engineering 115, 126, 140, 141, and 150.

Declaration of Major. A student is urged to declare a major by the time of registration for the first semester of the sophomore year, but is required to do so by the time of registration for the first semester of the junior year. Declaration of major is accomplished by completing a form available in the Office of the Dean of Engineering.

Double Major. If an engineering student completes simultaneously the requirements for a departmental major in arts and sciences and the requirements for a Bachelor of Science in Engineering degree, or satisfies simultaneously the requirements for two engineering majors, the official record will indicate this fact. However, the Director of Undergraduate Studies for the second major must certify that the

departmental major requirements have been met. The student must initiate the procedure, either through the Dean of the School of Engineering or through the Director of Undergraduate Studies in the second department. The completion of the requirements for the major in this department must be confirmed no later than the time of registration for the final semester. Courses which are common to both majors shall be counted toward satisfying the requirements of both majors.

Interdisciplinary Programs in Engineering. These programs parallel the major programs in biomedical, civil, electrical, and mechanical engineering, but are not individually accredited by ABET. They provide special opportunities for study in interdisciplinary fields, such as energy conversion, biochemical engineering, engineering mechanics, materials science, ocean engineering, pollution control, systems and controls, and urban engineering, leading to the Bachelor of Science in Engineering degree, which may be arranged with approval of the engineering faculty. Any student, in consultation with the adviser or another faculty member, may propose a unique combination of courses designed to meet particular career objectives. The proposal should be submitted to the Engineering Faculty Council, through the Dean of the School of Engineering, for approval; it may be submitted as early as the second semester of the freshman year and must be submitted before the beginning of the senior year. The proposal should include the student's reasons for pursuing the suggested program of study, and it must show how the proposed courses satisfy the following requirements:

1. The proposed program of study meets the general requirements for the Bachelor of Science in Engineering degree but cannot be accommodated by the approved departmental requirements in biomedical, civil and environmental, or electrical engineering, or mechanical engineering and materials science.
2. A program of at least eight engineering courses is included to provide depth in the chosen interdisciplinary area of study.
3. A program of at least four courses, in addition to the seventeen courses listed under general requirements, is included to provide breadth in technical areas (engineering, natural science, and mathematics).
4. The remaining courses, which are treated as electives, require the approval of the student's adviser.

Each student enrolled in an approved interdisciplinary program will be assigned to the appropriate engineering department for administrative purposes.

Program in Engineering and Public Policy. Engineering students may pursue a program of study leading to the degree of Bachelor of Science in Engineering, with a major in one of the five engineering fields of study and a second major in public policy studies. The program is sponsored by the School of Engineering and the Institute of Policy Sciences and Public Affairs. To qualify for a degree with this second major, a student must satisfy the series of courses, which may be characterized as electives within the engineering curriculum, that meet the requirements for the major in public policy studies. These requirements are a modified parallel of the requirements of the major in public policy studies as described in the "Courses of Instruction" chapter in this bulletin.

Bachelor of Science in Engineering/Master of Science Program. This program provides students with an opportunity to plan a coordinated five-year program of studies in the School of Engineering leading to both the Bachelor of Science in Engineering and Master of Science degrees. Application for admission to this integrated program may be made during the junior or senior year. Provisional admission to the Graduate School may be granted when the student enrolls for the semester during which the Bachelor of Science in Engineering degree requirements will be completed. Graduate level courses during this period which are in excess of Bachelor of Science

in Engineering requirements may be credited toward fulfillment of the Master of Science degree requirements.

Students must complete thirty semester hours of credit specifically approved for the Master of Science degree under the prevailing graduate rules; up to six of these hours may be thesis research if the program includes a written master's thesis. No more than nine semester hours of graduate work can be completed concurrently with completing the Bachelor of Science in Engineering degree requirements.

Residence Requirements. At least sixteen semester courses must be completed satisfactorily at Duke. This must include the work of the final two semesters, with the following exceptions: the student who has completed more than four full semesters of work at Duke may take the last two courses elsewhere; others may take the last course elsewhere. The courses taken elsewhere must be approved in advance by the student's major adviser and academic dean.

Pass/Fail Grading Option. With the consent of the instructor and the faculty adviser, an engineering student may choose to be graded on a pass/fail basis in up to four unrestricted electives or social sciences-humanities electives within the thirty-two-course program. A student may take no more than one course on a pass/fail basis each semester.

Repetition of Courses. An engineering student who has earned a grade of *D-*, *D*, or *D+* in a required mathematics course or a required engineering course may, with permission of his or her adviser, Director of Undergraduate Studies, and academic dean, repeat the course. Both grades will remain on the student's record. Only one credit may be counted toward fulfilling graduation requirements.

Annual Recognition. In acknowledgment of high academic achievement, recognition is given each summer to freshmen, sophomores, juniors, and seniors if the following requirements are met:

1. A normal academic load has been carried in the fall and spring terms.
2. Grades other than *P* have been earned in six semester courses.
3. No incomplete or failing grade has been received during the fall and spring terms

The *Dean's List* recognizes students who earn a 3.3 average on all work in both the fall and spring terms. The *Dean's List with Distinction* includes students who earn a 3.6 on all work in both the fall and spring terms of an academic year.

Continuation Requirements. A student must achieve a satisfactory record of academic performance each semester and make satisfactory progress toward graduation to remain enrolled in the University.

A student must pass at least three courses in each semester, except for the first semester of the freshman year, in which at least two courses must be passed. A student who fails to meet this continuation requirement must leave the University for at least two semesters. A complete summer session may be counted as a semester. Following application for readmission, return must be approved by the Dean and the Director of Undergraduate Studies in the student's major department. If the student thereafter fails to pass three courses in a semester, permanent dismissal from the University usually results. A student who enrolls in more than four courses in a given semester and fails two or more of them will not be permitted to enroll for more than four courses in the following semester without approval of the Dean. In addition, a student may be dismissed temporarily or permanently for failing to make satisfactory progress toward graduation, including satisfactory progress toward fulfillment of curricular requirements within ten semesters.

The term *satisfactory progress* shall be defined also by the following schedule: *

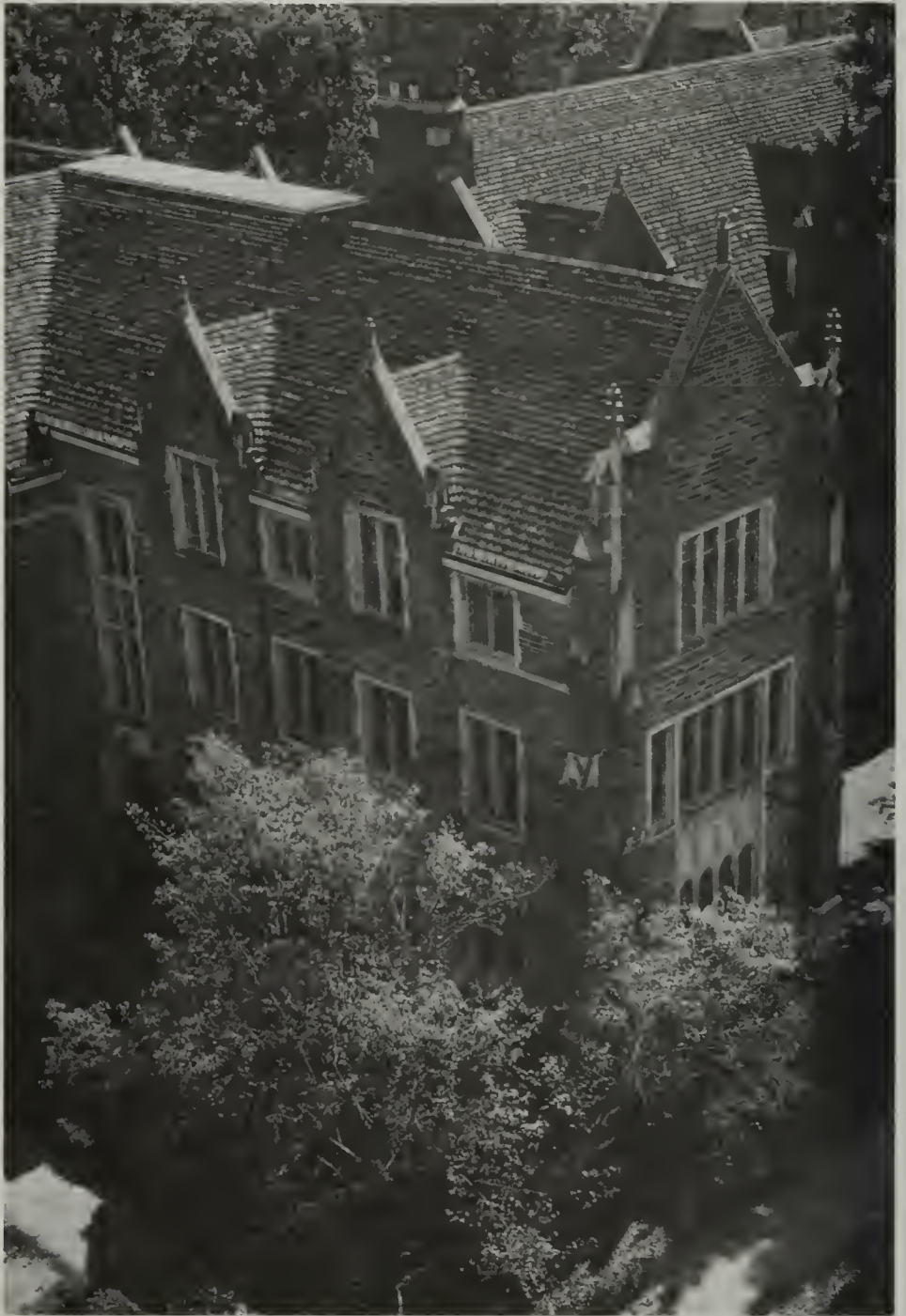
*Numbers in parentheses apply to all students matriculating in September 1984 and thereafter.

1. To begin enrollment in the second year, a student must have passed 6 s.c. and earned *P*, *C-*, or better in 3 (4) s.c. †
2. To begin enrollment in the third year, a student must have passed 13 s.c. and earned *P*, *C-*, or better in 9 (11) s.c.
3. To begin enrollment in the fourth year, a student must have passed 20 s.c. and earned *P*, *C-*, or better in 16 (18) s.c.
4. To begin enrollment in the fifth year, a student must have passed 27 s.c. and earned *P*, *C-*, or better in 23 (25) s.c.

Grade Requirement for Graduation. Of the thirty-two semester courses which fulfill the specified categories in the Bachelor of Science in Engineering degree requirements, twenty-eight (thirty) or their equivalent in number must be passed with grades of *P*, *C-*, or better.

†Continuation from the first to second year shall be based only on course credits earned at Duke and credits received through the Advanced Placement program.

Academic Procedures and Information



Advanced Placement

Scores on the tests discussed below and documented previous educational experience are the criteria used to determine a student's qualifications for certain advanced courses. If questions arise, students should consult the Director of Undergraduate Studies in the appropriate department.

College Board Advanced Placement Program (APP) Examinations. A score of 3, 4, or 5 on College Board Advanced Placement Program Examinations, taken prior to matriculation in college, is the basis for consideration for credit and placement in advanced courses in art, botany, chemistry, computer science, English,* French, German, history, Latin, mathematics, music, physics,** Spanish, and zoology. The record of a student presenting such a score and desiring to continue in the same subject at Duke will be evaluated for credit and for placement in an advanced course. Departmental policies regarding advanced placement and credit may vary. In the case of French, German, Latin, and Spanish, APP scores of 3, 4, or 5 may result in placement in courses at the 100 level; approval of the Director of Undergraduate Studies or Supervisor of Freshman Instruction in the appropriate department is required before final placement is made. Credit may be granted for one or two courses in each subject area, with the approval of the academic department concerned. A student who has earned a score of 3 and who is granted deferred credit by individual department policy must earn a grade of C- or better in the first course taken to validate the deferred credit. Pass/fail grading is *not* an option for such courses. The validating course must be completed by the end of the sophomore year. Several departments award neither credit nor placement for scores of 3. Also, see the section on residence requirements in the chapter "Degree Programs."

College Board Achievement Tests. Scores on College Board Achievement Tests are the basic criteria for placement in French, German, Italian, Spanish, Latin, and mathematics. Course credit is not given for courses bypassed. The following tables will assist students in making reasonable course selections in the subjects indicated.

*The score in English Advanced Placement, although qualifying a student for advanced courses in literature, does not satisfy the requirement in Writing.

**In order to receive credit for Physics 51 or 52, a student must take a validation test during orientation.

French*		German		Italian	
College Board Achievement Scores	Course Placement	College Board Achievement Scores	Course Placement	College Board Achievement Scores	Course Placement
200-370	French 1-2	200-390	German 1†	200-440	Italian 1-2
380-440	French 12	400-560	German 63	450-540	Italian 63
450-540	French 63	570 plus	Third year‡	550 plus	Italian 111
550-590	French 76				
600	French 100- level course§				

Spanish*		Latin		Mathematics#	
College Board Achievement Scores	Course Placement	College Board Achievement Scores	Course Placement	College Board Achievement Scores	Course Placement
200-420	Spanish 1-2	200-520	Latin 1†	480	Math. 9-10
430-490	Spanish 12	530-630	Latin 63	490-540	Math. 19
500-570	Spanish 63	640 plus	Third year‡	550-580	Math. 31A
580-620	Spanish 76			590-800	Math. 31 or 33
630 plus	Spanish 100- level course§				

*In these languages students are permitted to drop back one level without loss of credit (e.g., from 101 to 76 or from 76 to 63). No credit will be allowed for courses two levels below the achievement score (e.g., students with a score of 640 in French or Spanish could not receive credit for 63, but could for 76). In no case will credit be given for 1-2 to students with three or more years of high school French or Spanish.

†The first year of a language may *not* be taken for credit by a student who has completed more than two years of that language in secondary school. In rare cases, an exception may be granted with permission of the Director of Undergraduate Studies in the appropriate department.

‡An exception may be granted in consultation with the Director of Undergraduate Studies.

§French 111 and Spanish 110 are not open to first semester freshmen with a score of less than 700.

#In the absence of an Achievement Test score, course placement is determined by the SAT score as follows: 490 or below—Math. 9-10; 500-600—Math. 19; 610-650—Math. 31A; 660-800—Math. 31 or 33; 750-800—Math. 31X.

College Board College Placement Tests. The College Board Placement Tests in French, German, Italian, Latin, and Spanish should be taken during orientation by (1) those students who desire to continue in the language but have not taken the College Board Achievement Test, and (2) those students who, having taken the College Board Achievement Test, wish to challenge the score for the purpose of qualifying for a higher level language course. These tests should be taken also (3) by all students in Trinity College who are presenting units of high school credit in a foreign language and who have not taken the College Board Achievement Test in that language to demonstrate their proficiency. Taking the tests under these circumstances is necessary to determine whether the student has demonstrated foreign language proficiency at entrance or, if not, what placement level at Duke is most appropriate to his or her needs. See the statement on the requirement in the section on foreign language in the chapter "Degree Programs."

All freshmen who plan to take mathematics during their first semester at Duke, and who do not submit the College Board SAT score or College Board Achievement Test score in mathematics, must take the College Board College Placement Test in mathematics during orientation. Students who have been placed in Mathematics 9-10, 19, or 31 but believe that their background in mathematics justifies a higher course placement need not take the College Board College Placement Test, but they should consult the Director of Undergraduate Studies or Supervisor of Freshman Instruction in the Department of Mathematics. Course credit is not given for courses bypassed on the basis of the placement tests.

Placement in Russian. Students who wish to continue in Russian at Duke should see the Director of Undergraduate Studies in the Department of Slavic Languages and Literatures. In the case of Russian, either College Board Achievement Test scores or College Board Placement Test scores serve as criteria for placement. Lacking these, the department offers an examination which is used in conjunction with other criteria for placing students at the appropriate course level.

Reading Out of Introductory Courses. Students demonstrating academic ability may be granted the option of reading out of an introductory or prerequisite course in order to allow them to advance at their own pace to upper level work. No course credit may be earned by reading out. Reading for a course and auditing are mutually exclusive procedures. Students must be recommended for the reading option by their academic deans, and their proposed programs of reading must be approved by the appropriate Director of Undergraduate Studies. Students may be certified for advanced course work by passing a qualifying examination prepared by the department. When an advanced course is completed, an entry is made on the permanent record that the qualifying examination was passed, but no course credit is awarded. Further information is available from the academic deans.

Transfer of Work Elsewhere

Evaluation of Work Taken Elsewhere. For students transferring from another accredited, degree-granting institution, credit of up to sixteen semester courses may be granted. Courses in which grades of less than C- have been earned are not accepted for transfer credit; students seeking transfer credit for courses in which they earned a P grade must present official verification that the P is equivalent to at least a C- grade. The semester-course unit of credit awarded at Duke for satisfactorily completed courses cannot, of course, be directly equated with semester-hour or quarter-hour credits. Ordinarily, transfer students will not be awarded more than four semester-course credits for one semester's work unless they have satisfactorily completed more than the normal course load at the institutions from which they have transferred. All courses approved for transfer are listed on the student's permanent record at Duke, but grades earned are not recorded. Courses taken at other institutions prior to matriculation at Duke are evaluated by the University Registrar and by the faculty.

Limitation on Work Taken Elsewhere. After matriculation as a full-time degree candidate in Trinity College of Arts and Sciences, a student may receive credit toward the Bachelor of Science or Bachelor of Arts degree for a maximum of two courses taken at another institution, whether in the summer while regularly enrolled at Duke, while withdrawn voluntarily from the college, or while on leave of absence (other than for an approved program of study abroad or an approved program at another institution in the United States). Full-time degree candidates in the School of Engineering may receive credit towards the Bachelor of Science in Engineering degree for a maximum of four courses taken at another institution. Ordinarily, no credit will be accepted for course work taken while a student is withdrawn involuntarily. For purposes of this regulation, advanced placement credit is not considered as work taken at another

institution. The provision of the residence requirement which allows a student to take the final courses elsewhere remains in effect. See the section on residence requirements in the chapter "Degree Programs."

Students may not transfer credit from two-year colleges after completing their sophomore year. At least half the courses submitted toward fulfillment of a student's major field must be taken at Duke, but departments may make exceptions to this rule in special circumstances. No credit is given for work completed by correspondence, and credit for not more than two semester courses is allowed for extension courses.

Approval for Courses Taken Elsewhere. Approval forms for courses to be taken at institutions other than Duke may be obtained from the offices of the academic deans. Students wishing to transfer credit for study at another accredited college while on leave or during the summer must present a catalog of that college to the appropriate dean and Director of Undergraduate Studies and obtain their approval *prior* to taking the courses.

Advising

Students and their advisers confer when necessary, but they should confer at least once before every registration period to review goals, plans for achieving them, and any problems encountered or anticipated. Before declaring a major in Trinity College, students confer with the premajor adviser, the academic dean for premajor students, or the academic dean in the division of their interests. Upon declaring a major, the student is assigned a faculty adviser; the academic dean for that division is also available for consultation. In the School of Engineering, the adviser's signature is necessary for registration and all course changes. Much good advising is informal and occurs in conversation with members of the faculty.

Registration

Students are expected to register at specified times for each successive term. Prior to registration each student receives special instructions and registration materials. Students prepare a course program, submit it at an appointed time to their advisers for review, and present the approved schedule at registration. In the School of Engineering, the schedule must be signed by the adviser.

Students who expect to obtain certification to teach in secondary schools should consult an adviser in the education program prior to each registration period to ensure that they are meeting requirements for state certification and that they will have places reserved for them in the student teaching program.

Those who register late are subject to a \$25 fine. Students who fail to register for the fall or spring semester are withdrawn and must apply for readmission if they wish to return; they also forfeit their registration deposits unless they indicate at the time of registration their intention not to continue in the University the following term. Those students who have not paid any fees owed to or fines imposed by the University (such as laboratory fees, library fines, and parking fines) by the date specified for registration for the following term will not be permitted to register for the following term until such fees and fines have been paid in full, notwithstanding the fact that the student may have paid in full the tuition for the following term.

Students planning to register for a course under the reciprocal (interinstitutional) agreement must have the course approved by the appropriate Director of Undergraduate Studies and their academic dean. Further information about registration procedures once approval is given may be obtained from the Office of the Registrar. See the chapter "Special Programs" for information regarding the reciprocal agreement with neighboring universities.

Duke Identification Card and Term Enrollment. Students are to report to 103 Allen Building at the beginning of each term to obtain semester validation of their Duke I.D. card. This card should be carried at all times. The identification card with proper validation is means of identification for library privileges, University functions, and services available to University students. Students are expected to present their card on request to any University official or employee. The card is not transferable, and fraudulent use may result in loss of student privileges or suspension. Loss of the card should be reported immediately to the Office of the Registrar where new ones can be obtained for \$5. Official enrollment is required for admission to any class. Failure to report, or to account beforehand for an absence, entails a loss of registration in courses.

Concurrent Enrollment. A student enrolled at Duke may not enroll concurrently in any other school or college without special permission of the appropriate academic dean. See, however, the statement regarding the reciprocal agreement with the University of North Carolina at Chapel Hill, North Carolina Central University in Durham, and North Carolina State University at Raleigh.

Course Changes after Classes Begin in the Fall and Spring Terms. During the drop/add period changes may be made in course schedules. Receipts for course changes made in 103 Allen Building must be retained.

In Trinity College of Arts and Sciences, students may drop and add courses during the first week of classes in the fall and spring terms at their own discretion; during the second week of the drop/add period they may drop courses at their own discretion, but the signature of the appropriate instructor is required for adding a course. After the drop/add period no course may be added; also, a course may not be changed to or from the pass/fail or audit basis. To withdraw from a course, students must obtain permission from their academic deans, and for reasons of course overload the academic dean may give permission up to midterm. Ordinarily, courses may not be discontinued after midterm. In extraordinary circumstances, however, e.g., for reasons of health, the academic dean may allow a student to withdraw. After the drop/add period, the student receives a *WP* grade (withdraw passing) or *WF* (withdraw failing) from the instructor. Course work discontinued without the dean's permission will ordinarily result in a grade of *F*.

Within the School of Engineering, the signature of the adviser is necessary for dropping or adding courses after classes begin. After the drop/add period no course may be added, and in order to withdraw from a course students must obtain permission from their academic deans. Factors to be considered by the dean include health, necessary outside work, and, up to the time midterm grades are issued, a course overload. Until the last four weeks of classes in the semester, the instructor must certify the student's standing in the course as satisfactory or as failing. In the former case a *WP* will be entered on the permanent record and in the latter, a *WF*. During the last four weeks of classes in any semester, or the equivalent in the summer terms, *W* will be assigned if, in the judgment of the student's dean, compelling and extraordinary circumstances make it necessary for the student to drop the course; otherwise, the course must be continued to the end of the semester. A course discontinued without approval will result in a grade of *F*.

When students note an error in their course schedules, they should consult with their academic dean.

Course Changes for the Summer Terms. Course changes are accomplished by submitting the three-part drop/add form(s) to the Office of the Summer Session, 121 Allen Building. Beginning April 29, all course changes must be approved by the appropriate academic dean. The Director of the Summer Session serves as the dean for

all non-Duke students. Students who are out of town must contact their academic dean directly to arrange for dropping or adding courses.

Courses may be added before or during the first three days of the term (see also the section on late registration and payment). After the third day of the term, no course may be added. Prior to the first day of the term, students may drop a course or courses for which they have registered without penalty. During the first three days of the term, students will be charged 20% of the tuition for dropping a course or courses if this results in any reduction of tuition for the term. With the permission of the academic dean a course may be dropped until the end of the fourteenth day of a regular summer term (eleventh day at the Marine Laboratory); the instructor then assigns a WP or WF grade. Course work discontinued without the approval of the dean will result in a grade of F. (See also the section on Withdrawal Charges and Refunds.)

Course Load and Eligibility for Courses

Students are reminded that it is their responsibility to be certain that their course load conforms with academic requirements. The normal and expected course load in the fall or spring term is four semester courses. To take fewer than four or more than five semester courses, students must have the approval of their academic deans. No student, however, may take more than six courses in any semester. With the approval of their academic dean, seniors in Trinity College and the School of Engineering who need fewer than eight semester courses for graduation requirements may take an underload.

Maximum course program for one term of the summer session is two courses, one of which may be a laboratory course. Students in the School of Engineering may enroll in two laboratory courses. In addition, a student may enroll in a physical education activity or dance activity course for one-half course credit.

Self-pacing during a given calendar year (two regular semesters plus two Duke summer terms) is possible with the approval of the student's academic dean and faculty adviser (and in consultation with the Office of Undergraduate Financial Aid, if the student is receiving monetary support from the University). Prior to the beginning of a semester, a student may apply to take fewer than four courses for one or more semesters in a given calendar year after the freshman year, providing the student can meet the continuation requirements described in the chapter "Degree Programs." Advanced placement credits and summer work taken elsewhere are excluded when minimum annual continuation requirements are considered under this plan.

Eligibility for Courses. The rules established by the Graduate School provide that juniors and well-qualified sophomores may enroll in a 200-level (senior-graduate) course if they have obtained written consent of the instructor, as well as that of the Director of Graduate Studies in the department concerned. Undergraduate students may not enroll in 300- or 400-level courses.

Seniors who, at the beginning of a term, lack no more than three semester courses toward the fulfillment of the requirements for the Bachelor of Arts or Bachelor of Science degree may enroll in graduate courses, for a maximum course load of five semester courses. Admission to the Graduate School is necessary.

Students may not register for two courses meeting at the same time. In Trinity College no course may be repeated for credit or a grade if a passing grade has been earned previously, except where noted in the course description. A course previously passed, however, may be audited.

Course Audit

Students who audit a course submit no daily work and take no examinations. They do not receive credit for the course. With the written consent of the instructor, a full-time degree student is allowed to audit one or more courses in addition to the normal program. Physical education activity, studio art, applied music, and dance activity courses may not be audited. In the fall or spring term, a part-time degree student may audit courses by payment for each course audited. In a summer term, a student carrying two courses for credit may be given permission to audit, without additional fees, nonlaboratory courses with the above exceptions. A student in a summer term carrying less than a full program for credit may secure permission to audit (above exceptions apply) but is required to pay half the University fee for the course. After the drop/add period in any term, no student classified as an auditor in a particular course may take the course for credit, and no student taking a course for credit may be reclassified as an auditor. A student may not repeat for credit any course previously audited.

Faculty members, staff, alumni, employees and their spouses, as well as spouses of currently enrolled students, and members of the Institute for Learning in Retirement may audit courses without enrolling concurrently in another course. Formal application is not necessary; written permission from the instructor must be obtained and a course card must be signed by the Director of the Office of Continuing Education. Consult the chapter "Financial Information" for the appropriate fee schedule. Auditors must register on the Friday before classes begin.

Independent Study

Independent study enables a student to pursue individual research and reading in a field of special interest under the supervision of a member of the faculty. A student—with the approval of an adviser, the instructor, and the Director of Undergraduate Studies in the instructor's department—may enroll in independent study for any term at Duke. In Trinity College, instructors of independent study courses are expected to meet with the students enrolled at least once every two weeks during the fall or spring and at least once each week during a summer term.

House Courses

House courses, offered in the fall and spring terms, are organized by students within given residential units. They are intended to encourage students to take initiative in creating academic experiences that are not offered by the departments. A house course must be sponsored by a faculty member in the arts and sciences, reviewed by the department of that faculty member, and approved by the Committee on Courses of Instruction of the Undergraduate Faculty Council of Arts and Sciences. House courses carry a half-course credit. In the School of Engineering, house courses cannot be used to meet degree requirements. In Trinity College not more than two semester-course credits earned in house courses may be counted toward the course requirement for graduation. House courses do not count toward other requirements. Grades are submitted on the pass/fail basis. The academic deans can provide further details.

Submission of Term Paper

Students who wish (under unusual circumstances) to submit a single paper for credit in more than one course must receive prior written permission from each course instructor. The student must indicate the multiple submission on the title page of the paper.

Declaration of Major or Division in Trinity College of Arts and Sciences

Before declaring a major or interdepartmental concentration in Trinity College, students work with their premajor advisors and with other members of the faculty and staff to develop a "long-range academic plan," which outlines academic objectives and plans for meeting goals. The plan should describe the proposed major program, related classroom and outside experiences, and the general pattern of elective courses, as well as the means by which the student will meet established college requirements for graduation.

Each freshman must declare a major or division of interest (humanities, social sciences, or natural sciences) by the registration period in the spring of the freshman year. Freshmen who elect to postpone their declaration of major will not file long-range academic plans during their first year but will be expected to discuss their progress in developing their plans with their advisers during that registration period. All students must secure formal approval of their long-range plans and must declare their major before the last day of classes in their fourth undergraduate semester. Forms for filing the official long-range plan and for registering the initial declaration of major are available in the Premajor Advising Center.

After declaring a major, students are assigned an adviser in the department of the major and an academic dean in the division of concentration. Students who, having already declared a major, wish to change their area of concentration complete a form in the Office of the Registrar and subsequently develop a revised long-range



academic plan in consultation with appropriate faculty members in the new major department and, if necessary, with their academic dean. The second major should be declared in the Office of the Registrar before registering for the final term.

A student may declare an interdepartmental concentration after conferring with the Directors of Undergraduate Studies of the departments involved, and they or other advisers assist the student in preparing a program of course work. The program, which must be planned early in the undergraduate career, must consist of at least three courses beyond the introductory level in each of the departments. One of the departments should be identified as primarily responsible for the student's advising. A copy of the plan for the program, with a descriptive title which will appear on the student's permanent record, should be presented, along with the written approval of the Directors of Undergraduate Studies, to the appropriate academic dean. A student who declares an interdepartmental concentration must identify the second and third divisions and satisfy those requirements and all others for Program I.

A student may have a second major recorded on the permanent record; if the student's second major is not offered within the degree to be granted for completion of the first major, a notation of the second major will appear on the transcript. Majors offered within each degree are listed below:

Bachelor of Arts. Afro-American studies, anthropology, art design, art history, biology, botany, Canadian studies, chemistry, classical studies (ancient history and archaeology), comparative area studies, comparative literature, drama, economics, English, French, geology, Germanic languages and literature, Greek, history, Latin, mathematics, medieval and Renaissance studies, music, philosophy, physics, political science, psychology, public policy studies, religion, Slavic languages and literature, sociology, Spanish, and zoology.

Bachelor of Science. Biology, botany, chemistry, computer science, geology, mathematics, physics, psychology, and zoology.

Changes in Status

Withdrawal and Readmission. Students who wish to withdraw from the college must give official notification to their academic dean. Notification must be received prior to the beginning of classes in any term or tuition will be due on a pro rata basis. (See the section on refunds in the chapter "Financial Information.") For students withdrawing on their own initiative after the beginning of classes and prior to the last four weeks of regular classes in the fall or spring term, or before the last two weeks of regular classes in a summer term, a *W* is assigned in lieu of a regular grade for each course. After these dates an *F* grade is recorded unless withdrawal is caused by an emergency beyond the control of the student, in which case a *W* is assigned by the student's academic dean.

Applications for readmission are made to the appropriate school or college. Each application is reviewed by officers of the school or college to which the student applies, and a decision is made on the basis of the applicant's previous record at Duke, evidence of increasing maturity and discipline, and the degree of success attendant upon activities during the time away from Duke. Students who are readmitted usually cannot be housed on campus.

Applications for readmission must be completed by November 1 for enrollment in the spring, by April 1 for enrollment in the summer, and by July 1 for enrollment in the fall.

Leave of Absence. An upperclassman in good standing may apply in writing to the appropriate academic dean to take a leave of absence for one or two semesters; the deadline for application for a leave is the end of the registration period for the semester immediately preceding the leave. Students returning from approved medical, financial, or study abroad leaves and desiring housing on campus will be placed

in the general housing lottery, provided they have submitted the appropriate information to the Office of Student Affairs by the deadline noted above and provided that they lived on campus before taking their approved leave. Those students approved for personal leaves are not guaranteed on-campus housing, but will be given highest priority on the housing waiting list provided the same deadline and qualifications described above have been met. Unless an exception for an emergency is authorized by the students' academic deans, students applying after the course registration cited above will lose their priorities in University housing for the period following the leave.

Registration materials will be mailed to a student on leave, but final registration is, of course, contingent upon the student's fulfilling the terms of the leave. A student failing to register while on leave will be withdrawn from the University and will have to apply for readmission.

A student who undertakes independent study under Duke supervision and for Duke credit is not on leave of absence even if studying elsewhere. The student registers at Duke as a nonresident student and pays the appropriate fees or tuition at Duke. This also applies to Duke programs conducted away from the Durham campus.

Transfer between Duke University Schools. Students in good standing may be considered for transfer from one Duke undergraduate school or college to another, upon written application and request for a letter of recommendation from their academic dean. The review of requests to transfer involves consideration of a student's general academic standing, citizenship records, and relative standing in the group of students applying for transfer. The school or college to which transfer is sought will give academic counseling to a student as soon as intention to apply for transfer is known, although no commitment will be implied.

A student may apply to transfer at any time prior to or after receiving a baccalaureate degree. A student transferring to Trinity College of Arts and Sciences from the School of Engineering, prior to receiving a baccalaureate degree, may not use more than six professional school credits toward the Bachelor of Arts or Bachelor of Science degree. If admitted after having earned a baccalaureate degree, a student must undertake prescribed additional undergraduate work to qualify for a second baccalaureate degree.

Full-Time and Part-Time Degree Status. Ordinarily candidates for degrees are expected to enroll for a normal course load each semester. Students who need to change from full-time status to part-time status must request permission from their academic dean. For special reasons approved by the dean, a full-time student, who is qualified to continue, may register as a part-time student for not more than two courses (or two courses and a half-credit physical activity or dance activity course) during the fall and spring. Part-time students may not live in the residence halls.

Resident and Nonresident Status. See the chapter "Campus Life and Activities."

Nondegree to Degree Status. A nondegree student must apply to the Office of Undergraduate Admissions for admission to degree candidacy.

Class Attendance, Excused Absences, and Tests

Responsibility for class attendance rests with the individual student, and since regular and punctual class attendance is expected, the student must accept the consequences of failure to attend. Instructors may refer to the student's academic dean a student who is, in their opinion, absent excessively. As a rule, absences from required classes and tests are excused only for illnesses certified by a medical official of the University or for authorized representation of the University in out-of-town events. Officials in charge of groups representing the University are required to submit the names of students to be excused to the appropriate deans' offices forty-eight hours before absences are to begin.

Class times are officially scheduled at registration unless designated "to be arranged" (TBA). No class time may be changed without prior permission of the University Schedule Committee. Within-class tests (except for the final) are to be given at the regular class meeting times. Exceptions are made for block tests that have been approved by the University Schedule Committee. Hours set up for block examinations are 7:30 to 8:45 A.M. on Tuesdays and Thursdays.

Incomplete Course Work

If because of illness, emergency, or reasonable cause a student cannot complete work for a course, the student may request in writing to his or her academic dean the assignment of an *I* (incomplete) for the course. If the request is approved by the instructor in the course and by the student's academic dean, then the student must satisfactorily complete the work prior to the last class day of the fifth week of the subsequent semester or a grade of *F* will be recorded for the course. An *I* taken in the fall semester must be resolved in the succeeding spring term; an *I* taken in the spring or summer must be completed in the following fall term. A student not enrolled in the University during that subsequent semester will have until the end of the fifth week of the next semester of matriculation to clear the *I*. An *I*, once recorded, will remain permanently on the student's record, even after the final grade is subsequently assigned for the course. If a student whose work is incomplete is also absent from the final examination, an *X* is assigned for the course. Students may not complete work in a course after graduation. For a discussion of the possible impact of an *I* grade on continuation, see the sections on satisfactory performance each term in the chapter "Degree Programs."

Final Examinations and Excused Absences

The times and places of final examinations for the fall and spring terms are officially scheduled by the University Schedule Committee, generally according to the day and hour of the regular course meeting; changes may not be made in the schedule without the approval of the committee. If a final examination is to be given in a course, it will be given at the officially scheduled time. Take-home examinations are due at the regularly scheduled hour of an examination, based on the time period of the class. In fall or spring courses where final examinations are not scheduled, hour examinations may not be given in the last week of classes. In the summer session, final examinations are held on the last two days of each term as specified in the summer session brochure calendar. Final examinations for short courses are held on the last day of the course.

No later than the end of the first week of classes of the fall and spring term, the instructor is required to announce plans for the final examination exercise. Unless departmental policy stipulates otherwise, the form of the final exercise is determined by the instructor. However, a final written examination may not exceed three hours in length and a final take-home examination may not require more than three hours in the actual writing.

If a student is absent from a final examination, an *X* is given instead of a final grade. *An acceptable explanation for the absence must be presented to the appropriate academic dean within forty-eight hours after the scheduled time of the examination, or the X is converted to an F.* If the absence is excused by an academic dean, the student arranges with the dean and the instructor for a make-up examination to be given at the earliest possible time. An excused *X* not cleared by the end of the fifth week of the following semester is converted to an *F*. A student not enrolled in the University during that following semester has until the end of the fifth week of the next semester of enrollment to clear the *X* unless an earlier deadline has been established by the instructor and the academic dean.

Grading and Grade Requirements

Final grades on academic work are sent to students after the examinations at the end of each term. Midterm advisory grade reports for freshmen are issued in the fall and spring.

Passing Grades. Passing grades are *A*, exceptional; *B*, superior; *C*, satisfactory; *P*, passing (see pass/fail option below); and *D*, low pass. These grades may be modified by a plus or minus. A *Z* may be assigned for the satisfactory completion of the first term of a two-course sequence, and the final grade for both courses is assigned at the end of the second course of the sequence.

Although the *D* grade represents low pass, in Trinity College not more than two courses passed with *D* grades may be counted among those required for year-to-year continuation or among the thirty-two courses required for graduation. Courses for which a *D* grade is earned, however, satisfy other requirements. Trinity College students may *not* repeat for credit any course in which a *D* grade or higher was earned.

Failing Grades. A grade of *F* or *U* (see pass/fail option below) indicates that the student has failed the course. The grade is recorded on the student's record. If the student registers for the course again, a second entry of the course and the new grade earned are made on the record, but the first entry is not removed.

Pass/Fail Option. With the consent of the instructor and faculty adviser, a student who has declared a major may register for grading on a pass/fail basis in one elective, nonmajor course each term. No degree requirements, except the requirement for thirty-two course credits and the continuation requirements, may be met by a course passed under the pass/fail option, unless the course is offered only on that basis. Preceptorials, discussion sections, seminars, and tutorials may not be taken on the pass/fail basis, unless the course is offered only on that basis.

After the drop/add period in any term, no changes from pass/fail to regular status, or from regular to pass/fail status, are permitted in any course. A *P* may not be converted subsequently to a regular letter grade, and the course may not be retaken under the regular grading system.

Grades When Absent from Final Examination. See the section on final examination and excused absences in this chapter.

Grades for Incompleted Work. See the section on incompleted work in this chapter.

WP, WF, and W Grades, and WE Designation. *WP* and *WF* grades may be issued if a student withdraws from a course after the drop/add period. (See the sections on course changes in this chapter.) *W* grades are issued if a student withdraws *from the University* before the last four weeks of regular classes in the fall or spring semester, or before the last two weeks of classes in a regular summer term. (See the section on withdrawal and readmission in this chapter.)

WE indicates correction of an error in registration. It is not a grade.

Academic Recognition and Honors

In determining a student's eligibility for annual recognition and graduation honors, the colleges consider only grades earned in Duke courses, including courses taken in the University's own study abroad programs and under the interinstitutional agreement.

Annual Recognition. In acknowledgment of high academic achievement, recognition is given each summer to freshmen, sophomores, juniors, and seniors if the following requirements are met:

1. A normal academic load has been carried in the fall and spring terms.
2. Grades other than *P* have been earned in six semester courses.
3. No incomplete or failing grade has been received during the fall and spring terms.

The *Dean's List* recognizes students who earn a 3.3 average on all work in both the fall and spring terms. The *Dean's List with Distinction* includes students who earn a 3.6 average on all work in both the fall and spring terms of an academic year.

Graduation Honors. Students who earn the following averages for all grades recorded at Duke are graduated with honors: 3.3 average, *cum laude*; 3.6 average, *magna cum laude*; 3.8 average, *summa cum laude*.

Graduation with Distinction. Most of the academic departments have programs for graduation with distinction for students in Programs I and II and in all engineering programs. To be eligible to begin a program, students must show promise of achieving, by the time of graduation, at least a *B* average in the major field. In addition, in the School of Engineering, some departments require at least a *B* average in all subjects and may have additional requirements.

Departments or interdepartmental honors committees may invite a student at the end of the sophomore or junior year to enter the Graduation with Distinction Program. The student participates in a seminar in the junior or senior year, and/or a directed course of reading, laboratory research, or other independent study. The student must then present the results of individual research and study in a distinguished piece of writing. The student's achievement, including the paper, is assessed by a faculty committee, and if the student has at least a *B* average in the major field, the committee may recommend that the student be graduated with distinction in the major field. A student engaged in an interdisciplinary program, including Program II, must attain an overall *B* average for courses taken in the departmental area of concentration or special study; achievement is assessed by an interdepartmental honors committee established by the Directors of Undergraduate Studies in the departments concerned. A student may also be graduated with distinction in a program of studies that does not offer a major. In such a program the student must present a *B+* grade point average in the program field and a *B* average in all subjects. The thesis is evaluated by an honors committee drawn from the faculty within the program. Interested students should consult the appropriate Directors of Undergraduate Studies or Directors of the programs of interest.

Other Honors. Elections to the freshman honorary society, Phi Eta Sigma, are made at the end of the fall and spring semesters. Freshmen who earn a 3.5 average in four or more semester courses in their first semester of enrollment, or those whose cumulative average at the end of their second Duke semester is 3.5 or above in a program of eight or more semester courses, are invited to membership.

Elections of undergraduate students in Trinity College and the School of Engineering to membership in the national honorary society, Phi Beta Kappa, are held in the spring and fall. A review of the academic record of all prospective candidates is conducted in the junior and senior years as well as in the term following graduation. (Doctoral students, on the other hand, are nominated by their department.) Eligibility for election is determined not by the University, but by the local chapter of the society. No less than four-fifths of earned credits must have been taken on the regular grading system (*A-F*). The total number of persons elected annually is limited by bylaw to 10 percent of the graduating class. Inquiries concerning distribution requirements for students in the School of Engineering should be directed to Professor Rhett George, Department of Electrical Engineering. All other inquiries may be directed to the Secretary of Phi Beta Kappa, Box 4795, Duke Station, Durham, North Carolina 27706.

Elections to the national engineering honorary society, Tau Beta Pi, are held in the fall and spring. Eligibility is determined on the basis of distinguished scholarship and exemplary character. Engineering students whose academic standing is in the upper eighth of the junior class or the upper fifth of the senior class have earned consideration by their local chapter. Inquiries may be directed to: Advisory Board, Tau Beta Pi, School of Engineering, Duke University, Durham, North Carolina 27706.

Students interested in various prestigious fellowships for graduate study (for example, the Fulbright-Hays, Luce, Marshall, Rhodes, and Winston Churchill) should consult the academic dean in charge of fellowships, 2022 Campus Drive. Specific information about deadlines and procedures is available through this office.

Notification of Intention to Graduate

The Diploma Card for students in Trinity College of Arts and Sciences and the School of Engineering is official notification that they expect to have completed all requirements for the degree and to receive the diploma on a particular graduation date. It is the responsibility of students to file the card on or before established deadlines. For students in Trinity College, the cards, to be filed during the fall registration period, are available in the College Recorder's office; in the School of Engineering, the Dean's office.

Commencement

Graduation exercises are held once a year in May when degrees are conferred upon and diplomas are issued to those who have completed degree requirements by the end of the spring term. Those who complete the requirements by the end of the summer term or by the end of the fall term receive diplomas dated September 1 or December 30, respectively. There is a delay of one month to two months in the mailing of September and December diplomas because diplomas cannot be issued until they are approved by the Academic Council and the Board of Trustees.

Prizes and Awards

The achievements of undergraduate students are recognized in various fields of activity. The following prizes suggest the range of recognition.

The Robert E. Lee Prize. This prize was initiated by the late Reverend A. W. Plyler, of the Class of 1892, and Mrs. Plyler and continued through the generosity of Mrs. Richard B. Maxwell, Jr., of the Class of 1942. The sum of \$50 is awarded annually at commencement to the person in the senior class of Trinity College of Arts and Sciences or the School of Engineering who, in character and conduct, scholarship, athletic achievement, and capacity for leadership, has personified most nearly the standards of the ideal student.

Julia Dale Prize in Mathematics. This is an annual prize of at least \$100. The winner is selected by the Department of Mathematics on the basis of excellence in mathematics. In some years first and second prizes are given.

The Henry Schuman Music Prize. A prize of \$100 is awarded annually to an undergraduate of Duke University for an original composition of chamber music or a distinguished paper in music history or analysis. The award is sponsored by the Department of Music through a continuing gift from Dr. and Mrs. James H. Semans who named the prize after Henry Schuman, a lifelong friend of the Semans and Trent families, a talented amateur violinist, and one who helped to build valued collections in the Duke library.

The Edward H. Benenson Awards. These awards of up to \$2,500 each will be given annually to undergraduates with an interest in art, music, drama, or creative writing to broaden students' educational and professional objectives. Those interested should consult the Chairman of their major department.

The Louis Sudler Prize in the Arts. The award is presented annually by the Institute of the Arts to the graduating senior who, in the opinion of a special institute committee, has demonstrated outstanding achievement in artistic performance or creation. The prize of \$1,000 was established in 1983 through the generosity of Louis C. Sudler, Chicago, Illinois.

The Anne Flexner Memorial Award in Creative Writing. This award has been established by the family and friends of Anne Flexner, who was graduated from Duke in 1945. There are three categories: prose fiction (5,000-word limit), poetry (200-line limit), and one-act plays (7,500-word limit). As many as three awards

may be given, but no more than one in any category, for the best pieces submitted by Duke undergraduates. The amount of each award will be \$200.

The David Taggart Clark Prize in Classical Studies. This prize of up to \$500 derives from income earned on the generous bequest (1956) of Professor David Taggart Clark, classicist and economist. It is awarded to the senior major in Greek, Latin, or Classical Studies who is judged to have written the best honors essay of the year.

The Phi Lambda Upsilon Prize. Phi Lambda Upsilon, the honorary chemical society, annually awards a prize to the junior Bachelor of Science and senior Bachelor of Science majors having the highest overall academic averages. The prize is a one-year membership in the American Chemical Society. The recipients' names are inscribed on a plaque displayed in the Chemistry Library.

The Chemistry Department Award. This prize is awarded annually to an outstanding chemistry major, usually receiving a B.S. degree. The basis for selection is the student's independent research and interest in pursuing advanced work in chemistry. The prize is a one-year subscription to an appropriate journal.

The Merck Index Award. This prize is awarded annually to one or two graduating chemistry majors intending to pursue a career in medicine. Selection, by a faculty committee, is based on scholastic excellence. The prize consists of a copy of the Merck Index presented by Merck and Co., Inc.

The James B. Rast Memorial Award in Comparative Anatomy. The parents of James Brailsford Rast, a member of the Class of 1958 of Duke University, endowed this award in his memory. The award, consisting of the *Atlas of Descriptive Human Anatomy* by Sobotta and bearing the James B. Rast Memorial bookplate, is given annually to the student who demonstrates the greatest achievement in the study of comparative anatomy.

The Winfred Quinton Holton Prize in Primary Education. This prize was established in 1922 by gifts of Holland Holton, Class of 1907, and Lela Young Holton, Class of 1907, in memory of their son, Winfred Quinton Holton, with the income to be used to provide a prize for investigative work in primary education. This prize may be made annually. Competition is open to Duke seniors and graduate students who are eligible to obtain certification to teach. A student who wishes to be considered for the prize must submit a paper to be judged by a faculty committee in the education program.

The William Senhauser Prize. Given by the mother of William Senhauser in memory of her son, a member of the Class of 1942, who gave his life in the Pacific theater of war on August 4, 1944. This award is made annually to the student in Trinity College of Arts and Sciences or the School of Engineering who has made the greatest contribution to the University through participation and leadership in intramural sports. The winner of this prize is chosen by a committee appointed by the President of the University.

The Roger Alan Opel Memorial Scholarship. A grant is awarded annually to a Duke student who will spend a year of undergraduate study at a British university. The student is selected on the basis of intellectual curiosity, academic ability, and financial need. The award was established by the parents of Roger Alan Opel, a senior at Duke University who was killed in November, 1971.

The William T. Laprade Prize in History. This prize is offered in honor of William T. Laprade, who was a member of the Department of History at Trinity College and Duke University from 1909 to 1953, and Chairman of the department from 1938 to 1952. It is awarded to a senior who is being graduated with distinction and whose senior essay in history has been judged to be unusually meritorious.

The Edward C. Horn Memorial Prize for Excellence in Zoology. Given each year to the graduating zoology major who has shown, in the opinion of the zoology faculty, the highest level of academic achievement and promise, this prize is offered in memory of Professor Edward C. Horn. It is a tribute to his warm regard for students and faculty and his appreciation of scholarly excellence. The prize consists of books appropriate to the student's field of interest.

Alona E. Evans Prize in International Law. An annual award to an undergraduate and/or graduate student in arts and sciences whose paper(s) on international law reflect(s) excellence in scholarship. Prizes of not more than \$250 each are derived from income earned on the generous bequest of Professor Alona E. Evans, A.B. '40, Ph.D. (political science) '45.

Robert S. Rankin Political Science Award. An annual award of \$100 is given to the most outstanding student in the field of American government and constitutional law. The funds are donated in memory of Professor Rankin by Judge Jerry B. Stone, A.B. '44, J.D. '48.

Proctor and Gamble Political Science Award. An annual award of \$100, made possible through a grant from the Proctor and Gamble Corporation, is awarded to the graduating senior political science major who has the highest overall grade point average.

The Karl E. Zener Award for Outstanding Performance of a Major in Psychology. The Karl E. Zener Award is given to a psychology major who has shown outstanding performance and scholarship. The award, based on the student's total grade record and a paper submitted to the award committee, consists of a monetary prize and inclusion by name on a memorial plaque in Zener Auditorium.

The Richard L. Predmore Award in Spanish. Given each year to an outstanding Spanish major in honor of Richard L. Predmore, Professor of Spanish at Duke University from 1950-1978 and Dean of the Graduate School from 1962-1969.

The Robert J. Niess Award in French. Given each year to an outstanding French major in honor of Robert J. Niess, Professor of French at Duke University from 1972 to 1981.

The Walter J. Seeley Scholastic Award. This award is presented annually by the Engineers' Student Government to that member of the graduating class of the school who has achieved the highest scholastic average in all subjects, and who has shown diligence in pursuit of an engineering education. The award was initiated to honor the spirit of academic excellence and professional diligence demonstrated by the late Dean Emeritus Walter J. Seeley. It is hoped that this award will serve as a symbol of the man and the ideals for which he stood. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

The American Society of Civil Engineers Prize. The prize is awarded annually by the North Carolina Chapter of the American Society of Civil Engineers to two outstanding civil engineering seniors, upon recommendation of the faculty of the civil engineering department. The basis for selection is the student's scholastic record, contribution to the student chapter, and participation in other college activities and organizations. The prize consists of a certificate of award and the payment of one year's dues in the American Society of Civil Engineers.

The George Sherrerd III Memorial Award in Electrical Engineering. This award is presented annually to the senior in electrical engineering who, in the opinion of the electrical engineering faculty, has attained the highest level of scholastic achievement in all subjects and has rendered significant service to the School of Engineering and the University at large. The award was established in 1958 by the parents of George Sherrerd III, a graduate of the Class of 1955, to recognize outstanding undergraduate scholarship. Recipients receive a monetary award, and their names are inscribed on a plaque displayed in the Engineering Building.

The Charles Ernest Seager Memorial Award. This award recognizes outstanding achievement in the annual Student Prize Paper Contest of the Duke branch of the Institute of Electrical and Electronics Engineers or significant contributions to electrical engineering. The award, established in 1958 by the widow and friends of Charles Ernest Seager, a graduate of the Class of 1955, consists of inscribing the name of the contest winner on a plaque displayed in the Engineering Building.

The Milmore Prize. This prize is awarded annually to students from North or South Carolina graduating in the Department of Electrical Engineering, who, in the opinion of the faculty of that department, and, as shown by their grades, have made the most progress in electrical engineering during the last year in school. The prize consists of a certificate of award and one year's payment of dues in the Institute of Electrical and Electronics Engineers for the membership year in which the honoree is awarded the baccalaureate degree.

The Raymond C. Gaugler Award in Materials Science and Engineering. This award is presented annually to the senior who has made the most progress at Duke in developing competence in materials science or materials engineering. The basis for selection is the student's scholastic record, research, or design projects completed at Duke, and interest in a materials-related career. The award has been established by Patricia S. Pearsall in memory of her grandfather, Raymond C. Gaugler, who was President of the American Cyanamid Company prior to his death in 1952.

The American Society of Mechanical Engineers Award. This award is presented annually to a senior in mechanical engineering for outstanding efforts and accomplishments in behalf of the American Society of Mechanical Engineers Student Section at Duke. The award consists of a certificate of recognition.

The School of Engineering Student Service Award. This award, established in 1978, is given to those graduating seniors who, by their contributions of time, effort, and spirit, have significantly benefited the community of the School of Engineering. The names of the recipients are inscribed on a plaque displayed in the Engineering Building.

The T.C. Heyward Scholarship Award. This award is presented annually to an outstanding senior in mechanical engineering at Duke University. The recipient is chosen by a committee of the mechanical engineering faculty and selection is based on academic excellence, engineering ability, and leadership. The recipient receives a monetary award and his or her name is inscribed on a plaque displayed in the Engineering Building.

The William Brewster Snow Award in Environmental Engineering. This award is presented to an outstanding senior in civil engineering who, through superior academic achievement and extracurricular activities, has demonstrated interest and commitment to environmental engineering as a career. Selection of the recipient is made by the civil engineering faculty. The recipient is presented with an inscribed plaque and his or her name is also inscribed on a plaque permanently displayed in the Engineering Building.

The Otto Meier, Jr. Tau Beta Pi Award. This award was established in recognition of Dr. Meier's leadership in establishing the North Carolina Gamma Chapter in 1948 and his continuous service as chapter adviser until 1975. This award is given annually to the graduating Tau Beta Pi member who symbolizes best the distinguished scholarship and exemplary character required for membership. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

The da Vinci Award. This award is presented by a faculty committee of the Department of Biomedical Engineering to the biomedical engineering senior with the most outstanding academic record. This award commemorates the contributions of Leonardo da Vinci in laying the foundations for the study of biomechanics.

The von Helmholtz Award. This award is presented by a faculty committee of the Department of Biomedical Engineering to the biomedical engineering senior who has made the most outstanding contribution to the department. This award commemorates the work of von Helmholtz in laying the foundations of biomedical engineering.

Aubrey E. Palmer Award. This award, established in 1980, is presented annually by the faculty of the Department of Civil and Environmental Engineering to a civil engineering senior in recognition of outstanding academic achievement. The award consists of a certificate of recognition and the name of the recipient inscribed on a plaque displayed in the Engineering Building.

American Society of Heating, Refrigerating, and Air-Conditioning Engineers Outstanding Achievement Award. This award is presented annually by the Triangle Chapter of ASHRAE to two seniors in mechanical engineering. Selection is based on evidence of scholarly contribution in the HVAC field such as a distinctive project or outstanding term paper. The award consists of a United States savings bond presented to each student.

The Mechanical Engineering and Materials Science Faculty Award. This award is presented annually in recognition of academic excellence to the graduating mechanical engineering senior who has attained the highest level of scholastic achievement in all subjects. The name of the recipient is inscribed on a plaque displayed in the Engineering Building.

Education Records

Duke University adheres to a policy permitting students access to their education records and certain confidential financial information. Students may request review of any information which is contained in their education records and may, using appropriate procedures, challenge the content of these records. An explanation of the complete policy on education records may be obtained from the Registrar's office.

No information, except directory information (see below), contained in any student records is released to persons outside the University or to unauthorized persons on the campus, without the written consent of the student. It is the responsibility of the student to provide the Office of the Registrar and other University offices, as appropriate, with the necessary specific authorization and consent.

Directory information includes name, addresses, telephone listing, date and place of birth, photograph, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and most recent previous educational institution attended. This information may be released to appear in public documents and may otherwise be disclosed without student consent unless a written request not to release this information is filed in the Office of the Registrar by the end of the first week of classes each term.

Special Programs



International Studies

The University's Center for International Studies coordinates and supports a wide array of research and teaching activities on international issues in Arts and Sciences and the professional schools. Faculty associated with the center come from diverse disciplines and reflect a wide range of intellectual interests. Their primary bond is a concern with peoples, events, movements, and institutions outside the United States; relations among nations; and activities and institutions in the United States that affect the rest of the world. These faculty share the belief that many, if not most, matters of importance occurring within the United States have significant effects abroad and that important activities that take place abroad frequently affect this country. They agree that the awareness of relationships among peoples, events, cultures, movements, institutions, and processes are essential for an appreciation of the world in which we live and deserve primary emphasis in teaching and research in the University.

The functions of the center are to provide focus, structure, and support to the research efforts of associated scholars and to serve as a catalyst for the coordination of varied research undertakings. It also exists to provide a conduit for the dissemination of these undertakings and to foster international activities in educational, research, and governmental institutions in the southeastern United States.

The Center for International Studies is involved in monitoring and initiating change in the international curricula of the undergraduate, graduate, and professional schools of the University. It has a special interest in undergraduate education and, through a variety of programs and activities, makes a contribution to the undergraduate academic experience. It seeks to attract students to the wide range of international and comparative courses available and administers the major of the Program in Comparative Area Studies, where students can concentrate on Africa, East Asia, Latin America, the Middle East, Russia and Eastern Europe, South Asia, Canada, or Western Europe. (See the chapter "Courses of Instruction.") All students are encouraged to pursue study abroad opportunities as well as language study in both non-Western and Western languages.

Courses in languages and literatures are offered under the center's auspices and are listed under Asian and African Languages, Comparative Literature, Interdisciplinary Courses, Linguistics, and Romance Languages. Instructors for these courses include Miriam Cooke, Ariel Dorfman, Edward Fowler, Richard Kunst, Noriko Nagai, Jing Wang, and Susan Willis.

The center also works toward establishing a closer relationship between foreign students and those interested in international studies (see the section on International House in the chapter "Campus Life and Activities").

Additional information on international studies and the Program in Comparative Area Studies is available from the Center for International Studies, 2122 Campus Drive, Durham, North Carolina 27706. Area studies function in centers, institutes, or programs in the following areas:

Asian-Pacific Studies. This program, administered by the Asian-Pacific Studies Institute, supports and encourages Asian and Pacific studies with special emphasis on Japan and China. Courses offered cover a range of disciplines including Japanese, Chinese, anthropology, economics, art, history, political science, and religion. The institute provides support for visiting lecturers and makes available a limited number of fellowships annually. Study abroad opportunities are available in China and Japan. An East Asia concentration is possible for majors in comparative area studies.

Canadian Studies. The Canadian Studies Center administers the Canadian Studies Program, which offers courses introducing students to various aspects of Canadian life and culture. Courses and lectures in a wide range of disciplines in the humanities and the social sciences are designed to increase students' knowledge and understanding of Canada. Special emphasis is placed on Canadian problems and comparisons of Canadian and American perspectives. Concentrations in Canadian studies are described in the chapter "Courses of Instruction." Study abroad opportunities are available.

Indian Ocean Studies. The Indian Ocean Studies Program combines the expertise of scholars who specialize in South Africa, East Africa, South Asia, and the Persian Gulf. A variety of courses is offered in the humanities and social sciences and guest lecturers are brought to Duke under the auspices of the program. A South Asian and African concentration is possible for majors in comparative area studies.

Islamic and Arabian Development Studies. The Center for Islamic and Arabian Development Studies, established in 1977 and assisted by grants from the government of Saudi Arabia and American corporations, administers this program. Students majoring in comparative area studies can concentrate in the Middle East, choosing from courses in Arabic, anthropology, history, literature, political science, and religion. The center provides financial support for outside lecturers in an interdisciplinary Islamic civilization course, a survey course on contemporary Arab affairs, and a senior-graduate seminar in comparative development problems in the Islamic world. The center also presents an outreach program to colleges and universities in the Southeast, conducts international conferences, supports lecturers, and has offered a summer program for college teachers.

Latin American Studies. The Council on Latin American Studies administers a comprehensive program in Latin American studies. A wide range of courses in the humanities, the social sciences, Portuguese, and Spanish is offered. Visiting professors and lecturers from Latin America, graduate fellowships, conferences, and summer programs abroad are supported by the program. Faculty associated with the program work closely with students majoring in comparative area studies who concentrate in Latin America.

Studies in Advanced Industrial Societies. This program combines the talents of experts in Western Europe, Japan, and North America in studies investigating problems common to advanced industrial societies. Faculty associated with the program work closely with students concentrating in Western Europe in the major in comparative area studies.

Russian and East European Studies. This program concentrates on Eastern Europe. It encourages proficiency in the Russian language. The faculty work closely with students concentrating on Russia in the major in comparative area studies.

Health Care in Developing Countries. This program concerns itself with the health problems of the Third World—their nature, the research needed to deal with them, and the delivery of health care to persons in need.

Study Abroad

A Duke student may earn credit for approved work completed during the academic year at a foreign university or for an approved program abroad sponsored by Duke or by another accredited American college or university in the fall, spring, and summer. To receive the maximum amount of study abroad transfer credit at Duke—four course credits for a full semester, eight for a full academic year, two for a summer—a student is expected to take a full, normal course load, as defined by the other accredited institution involved. No additional study abroad transfer credit will be awarded for a course overload. A leave of absence from the University is granted for a semester or academic year of approved study abroad. Arrangements are made normally for students to register, while abroad, for the term in which they plan to return.

SEMESTER AND ACADEMIC YEAR PROGRAMS

A student who wishes to receive transfer credit for study abroad should take into account the following criteria established by the faculty and administered by the Committee on Study Abroad:

1. a scholastic average of at least a *B* – (a student lacking this average may petition the academic dean responsible for study abroad if there are unusual circumstances);
2. certification, when applicable, from the foreign language department concerned, that the student has an adequate knowledge of the language of the country in which study is pursued;
3. approval, obtained before leaving Duke, of the appropriate Directors of Undergraduate Studies for the courses to be taken abroad, as well as approval of the program and the courses by the dean responsible for study abroad;
4. permission for leave of absence once program plans are complete.

Duke, at present, offers various programs in cooperation with other universities during the fall and spring terms. Students accepted may study in:

Austria. From time to time Duke sponsors a term program in Vienna for members of the Wind Symphony and other interested students. More information is available from Professor Paul Bryan, Department of Music.

Canada, Montreal. Duke students participating in the Duke/McGill University Exchange Program may spend one semester or academic year at McGill, located in the Quebec city of Montreal. Because the language of instruction at McGill is English, program applicants need not have studied French although some knowledge of it would be advantageous. The program is sponsored by the Canadian Studies Center and Trinity College; information and application forms are available at 2022 Campus Drive.

China. In cooperation with Nanjing University and Beijing Teachers College, Duke conducts a six-month study program in the People's Republic of China in the summer and fall terms. The program includes a fall term at Nanjing University preceded by an intensive language session in Peking. Participants must have at least one year of Chinese language. Information is available from the Asian-Pacific Studies Institute, 2111 Campus Drive, and at 2022 Campus Drive.

Egypt, Cairo. Through an agreement with the American University in Cairo, Duke students may spend a spring semester or academic year there taking regular classes with Egyptian students. They may enroll in general courses in humanities, social

sciences, and sciences, as well as in Arabic language and specialized courses in Middle Eastern studies. Applications are available at 2022 Campus Drive.

England, Canterbury. Selected Duke students may enroll for their junior year at the University of Kent at Canterbury in this exchange program administered by Trinity College. The University of Kent is a residential university near Canterbury, the oldest cathedral city in England, located only fifty-five miles from London and close to France. More information is available at 2022 Campus Drive.

England, Oxford. Through a special arrangement with several colleges at the University of Oxford, selected Duke students may spend their junior year at Oxford as regularly enrolled visiting students. The students are treated exactly like their British counterparts, and most of them live in college housing. Students may choose to concentrate their study in any one of the major fields in the humanities, social sciences, or selected natural sciences. Each student is assigned a tutor. Applicants must have a very strong academic record; previous course work in the subject to be pursued at Oxford is also required. More information may be obtained from 2022 Campus Drive.

France, Paris. Duke offers a full-year program in Paris in conjunction with the University of Paris-VII in the heart of the Latin Quarter. The language of instruction will be French; one course will be offered by the Resident Director from Duke, and three courses will be taught by the faculty of Paris-VII. Applicants must have completed four semesters of French plus two courses at the 100-level or above with a grade of at least B+. Priority will be given to juniors and full-year applicants, although some participants may be admitted for one semester only. More information may be obtained from 2022 Campus Drive or the Department of Romance Languages, 205 Languages.

Germany, Berlin. Each spring semester (February-July), four Duke students in junior, senior, or postbaccalaureate standing and with an advanced knowledge of German have the opportunity to participate in a special study program at the Free University of West Berlin. They will enroll in two intensive language courses and in one special course each in German history and political science, and will earn four direct Duke credits. Generous grants toward living expenses from the Free University are available. More complete information may be obtained in the Office of the Summer Session, 121 Allen Building.

Germany, Freiburg and Munich. Admission to these programs entails matriculation for an academic year at the University of Freiburg or the University of Munich. The student must, therefore, meet the admission standards of these universities. Courses are taken in German language, literature, art, and history through Wayne State University, while additional courses are taken at the German universities. More information is available from the Department of Germanic Languages and Literature, 104 Languages Building.

India, Madras. Duke students may participate in a fall semester program administered by the consortium of the South Atlantic States Association for Asian and African Studies, of which Duke is a member. The program, which is offered in alternate years, offers courses in Indian history and culture, beginning Tamil, and independent research. More information may be obtained at 2022 Campus Drive.

Italy, Rome. As one of the participating members of the Intercollegiate Center for Classical Studies in Rome, Duke University may send classics majors and other students with strong classical interests for admission to a term's work at the center, usually in the junior year. Instruction is offered in Greek, Latin, ancient history, ancient art, and archaeology. Some scholarship help is available. Additional information may be obtained from the Department of Classical Studies, 328 Carr Building.

Japan, Tokyo. Qualified students may be recommended each year by the Asian-Pacific Studies Committee for the junior year exchange program with International Christian University in Tokyo. This small, select university is noted for the international character of its student body (85-90 percent Japanese, 10-15 percent non-Japa-

nese, primarily from other Asian nations and the United States). Courses may be taken in English as well as Japanese. More information is available from the Asian-Pacific Studies Institute, 2111 Campus Drive, and 2022 Campus Drive.

Scotland, Glasgow. The Department of Public Policy Studies offers departmental majors the opportunity to study during the fall semester of their senior year at the University of Glasgow, where, practically speaking, public policy analysis was invented. Students will live on campus and will take the program's special seminar in public policy, in addition to three electives from the general university curriculum. Further information may be obtained from the Director of Undergraduate Studies in the Department of Public Policy Studies, 116D Old Chemistry.

Spain. Duke occasionally sponsors a term in Madrid. More information may be obtained from Professor Miguel Garci-Gómez, Department of Romance Languages.

Further information concerning semester and academic year programs, as well as the Oxford Summer Program (described below) and non-Duke summer programs, may be obtained at 2022 Campus Drive. All Trinity College students are responsible for following the procedures and meeting the deadlines set forth in Duke's study abroad booklet, *Opportunities for Undergraduate Study Abroad*, available there. In all cases, the dean of study abroad must be informed in advance about a student's plans.

DUKE SUMMER PROGRAMS ABROAD

The Office of the Summer Session, in cooperation with several University departments, provides several opportunities for students to study abroad while earning Duke University credit. Further information about these programs and about the time they will next be offered can be obtained from the program directors or the Office of the Summer Session, 121 Allen Building.

Brazil. The Summer Session Office and the Department of Political Science will offer a two-course, six-week program in Rio de Janeiro at IUPERJ, one of the leading institutes of social science research in Latin America. The objective of the program is to familiarize students with the political and social reality of Brazil and Brazil's relations with other countries. For further information inquire at the Summer Session Office, 121 Allen Building.

Canada. The Summer Session Office, the Department of History and the Canadian Studies Program will offer a two-course, six-week program at the University of Montreal. The objectives of this program are to familiarize students with the historical, political and social reality of Canada as a bilingual and bicultural society. For further information see Professor Clark Cahow, 114 Allen Building.

England, London. The Summer Session Office and the Departments of History and Civil Engineering will offer a two-course program in history and engineering in Great Britain. This six-week program will be based in London and students will be housed in dormitories. Excursions are planned to sites which illustrate scientific and technological achievements and principles. For further information see Professor Seymour Mauskopf, Department of History.

England, Oxford. The Duke/Oxford Summer Program, a six-week session at New College, Oxford, utilizes the Oxford tutorial system of education. The tutorial format is supplemented by the lectures given at the University of Oxford International Graduate Summer School by noted British scholars. Detailed information may be obtained in the Study Abroad Office, 2022 Campus Drive.

France. The Office of the Summer Session and the Department of Romance Languages sponsor a two-course, six-week program in Paris designed primarily for undergraduate students. It provides the opportunity to take Duke courses in the ambience of Paris. One course is in French language; the other is in French literature. Both courses are taught in French. For further information see Professor Jean-Jacques Thomas, Department of Romance Languages.

Germany, Erlangen. The Summer Session Office and the Department of Germanic Languages offer two programs at the Friedrich-Alexander Universität at Erlangen, Germany. One program provides an opportunity to study classroom German at different levels while living with a German family and participating in study, day trips, and excursions (May and June). In the other program, advanced students may choose from a variety of FAU courses and remain for a full summer semester (through early August). For further information see Professor Helga Bessent, Department of Germanic Languages.

Germany, West Berlin, East-West Politics. The Summer Session Office and the Department of Political Science will offer a two-course, six-week program in West Berlin on East-West politics. The focus will be on the political problems of and relations between East and West Germany. Both courses will be taught in English. The program is offered in cooperation with the Institute of Political Science of the Free University of West Berlin. One course will be taught by Professor Herbert Kitschelt of Duke; the other by a member of the faculty of the Free University. For further information see Professor Herbert Kitschelt, Department of Political Science.

Germany, West Berlin, North European Art. The Summer Session Office and the Department of Art and Art History will offer a two-course six-week program in Berlin focusing on North European art from the sixteenth to the twentieth centuries. One course will be taught by Professor Walter Melion of Duke; the other by several faculty members of the Art History Institute of the Free University of West Berlin. For further information see Professor Walter Melion, Department of Art and Art History.

Israel. The Department of Religion, the Duke Center for Judaic Studies, and the Summer Session Office offer a summer program in Israel—in Jerusalem and Galilee, giving students an opportunity to participate in an archaeological dig and to explore historical and contemporary Israel, as well as western religious traditions. For further information see Professors Carol Meyers and Eric Meyers, Department of Religion.

Italy, Florence. The Summer Session Office and the Departments of History and Art and Art History will offer a two-course, six-week program in Florence focusing on Renaissance Florentine history and art. Courses will be taught in English by Professors Ronald Witt and John Spencer. For further information see Professor John Spencer, Department of Art and Art History.

Italy, Rome. The Summer Session Office and the Department of Classical Studies sponsor a one-course summer program in Rome. Through visits to sites and museums, walking lectures, and readings, the course will examine the history of the city of Rome from the earliest times through the Baroque and modern periods. For further information see Professor Mary T. Boatwright, Department of Classical Studies.

Morocco. The Summer Session Office and the Department of Religion and the Center for International Studies will offer a six-week, two-course program at the University of Marrakesh. One course will be on the music and literature of North Africa; the other will focus on the cultural and religious forces of Islam. For information see Professors Miriam Cooke, Center for International Studies, Bruce Lawrence, Department of Religion, or Dean Brian Silver, International House.

The Netherlands. The Summer Session Office and the Program in Education will offer a two-course, six-week program in Amsterdam on learning disabilities under the direction of Emeritus Professor William Cruickshank of the University of Michigan, one of the world's leading authorities in this area, and Professor Lucy Davis of Duke. The program is designed primarily for advanced undergraduates, graduate students, and practicing learning disabilities specialists. Amsterdam is a major center for study and treatment of learning disabilities and the program will utilize guest lecturers from institutions in Amsterdam and elsewhere in the Netherlands. For further information see Professor Lucy Davis, Program in Education.

Scotland. The Summer Session Office will offer a two-course program on ethical issues in health and disease in the United States and Great Britain in Glasgow. Lec-

tures by medical personnel are supplemented by site visits to medical facilities and health care agencies. The group spends several days during the concluding week studying in London. For further information see Professor Thomas McCollough, Department of Religion.

Soviet Union. The Summer Session Office and the Department of Slavic Languages will offer a two-course summer program in Leningrad. Russian language study at different levels will be offered, as well as a course in Russian culture. Extensive excursions to Moscow and other cities, such as Tbilisi and Yalta are included in this program. Classes in Leningrad will be taught in the Russian Language Institute for Foreign Students by faculty members of the Institute. Students will be housed in an international hotel. For further information see Professor Edna Andrews, Department of Slavic Languages.

Spain. The Summer Session Office and the Department of Romance Languages offer a two-course, six-week program in Madrid and Santander (on the north coast), with excursions to Torremolinos, Toledo, Segovia, Sevilla, and Cordoba. All courses are conducted in Spanish and students live with Spanish families. For further information see Professor Miguel Garcí-Gómez, Department of Romance Languages.

Taiwan. The Summer Session Office and the Department of Sociology will offer a two-course, six-week program in Taipei focusing on comparative labor and business practices in Third World countries. One course will be taught by Professor Gary Gereffi; the other by a member of the faculty of the Academia Sinica in Taiwan. For further information see Professor Gary Gereffi, Department of Sociology.

Zimbabwe/Botswana. The Summer Session Office and the Department of Political Science will offer a two-course, six-week program focusing on the politics and development of southern Africa with guest lecturers from the Universities of Zimbabwe and Botswana, study trips to development projects, and excursions to Victoria Falls and Hwange (Wankie) Game Park. For further information see Professor Sheridan Johns, Department of Political Science.

Judaic Studies

Established in 1973 and supported by Duke University and the University of North Carolina at Chapel Hill, the Cooperative Program in Judaic Studies provides the opportunity of studying Jewish civilization through a broad range of courses including Hebrew language and literature, Yiddish language and literature, the archaeology of Palestine, and the history of Jewish religious thought. The program is administered by a joint planning council which also sponsors visiting speakers and professorships, library acquisitions, exchange programs with Israeli universities, summer school programs in Israel, and a publications program. The programs on the Duke campus are administered through the Duke Center for Judaic Studies. Students seeking further information on the program in Judaic studies should consult with Dr. Eric Meyers or Dr. Kalman Bland in the Department of Religion, 230 Gray Building.

Science, Technology, and Human Values

The Program in Science, Technology, and Human Values provides students an opportunity to explore the social and cultural dimensions of science, technology, and medicine. Through course work and a wide variety of extracurricular activities, students are introduced to the perspectives and insights of other disciplines in order to develop a richer and more informed understanding of their own field of specialization. The program brings together students and faculty from the sciences and engineering with their counterparts in the humanities and social sciences, with a heavy emphasis on interdisciplinary study and discussion. Detailed information is given in the chapter "Courses of Instruction" in the Bulletin.

Human Development

This interdisciplinary program provides opportunities to compare and to explore the complementarity of disciplinary perspectives on the biological, biomedical, psychological, and social aspects of human development. The program, which is more fully described under "Courses of Instruction," integrates courses, a research apprenticeship, and special events through an active advisory procedure. For more information and a program brochure, see the University Council on Aging and Human Development, 3502 Gerontology Building.

Women's Studies

The Women's Studies Program is a multidisciplinary forum for the study of women's roles and gender differences in various societies, past and present. Established in 1982, it offers courses, lectures, films, programs, and research support and brings together faculty and students from all fields who are concerned with both the theoretical questions stemming from the study of gender in the disciplines as well as the implications of such investigations for the status of women and men in contemporary societies. The program seeks to encourage the use of new scholarship, which in the last two decades has challenged empirical and theoretical understandings of the sexes, from the perspectives of the humanities, the social sciences, and the biological sciences. *Signs: Journal of Women in Culture and Society* is edited in the Office of Women's Studies, providing students with the opportunity to be involved in the development of the most recent scholarship on women. For more information on Women's Studies, call the Office of Women's Studies at 207 East Duke Building, (919) 684-5683.

Twentieth-Century America Program

The Twentieth-Century America Program explores modern American society in a group of interrelated courses from the perspectives of history, literature, sociology, religion, and political thought. The program offers five courses in the fall, of which participants must take at least three. Some twenty-five students are selected for the program; all undergraduates may apply.

This special program provides the student with the opportunities that come from relatively small classes (often of seminar format), a program of interrelated and mutually reinforcing courses, and close relationships with professors and stimulating fellow students.

Courses that the program has offered include English 1 (special section), History 92, Sociology 101, Political Science 144S, and Religion 60S (see descriptions in this bulletin). Further information and application forms may be obtained from the director of the program who can be reached through the Premajor Advising Center.

Perspectives on Marxism and Society

Perspectives on Marxism and Society is a program devoted to the study of Marxist theories of society. Courses in the program focus on Marxism, not primarily as a political or ideological system, but as a scholarly methodology incorporating a variety of analytical techniques across a wide range of disciplines. The unifying theme of the program is a critical appraisal of Marxist methods of analysis and their social implications, considered in the light of theoretical alternatives and changing historical circumstances. Courses included in the program cover a wide range of subjects, including sexual and racial inequality, alienation, development and underdevelopment in the world system, labor processes, protest movements, and ideologies.

Students in the program will be required to take a core course in varieties of Marxist analysis. Four more approved courses, no more than three from one depart-

ment, will complete the program of study. A certificate will be awarded to those who meet the requirements of the program. Students in the program will be expected to major in another discipline, with the program a supplement to their major. Full details concerning the program and its courses can be obtained by writing or calling the director, Professor Joseph Di Bona, Program in Education.

Institute of the Arts

The Institute of the Arts coordinates, promotes and develops activities in the performing and creative arts, originates new projects in the arts, sponsors residencies by professional artists, initiates interdisciplinary courses, and works to define and enhance the role of the performing and creative artist in a liberal arts setting. The Institute sponsors a one-semester, off-campus residency program, Duke in New York Arts, open to a limited number of juniors and seniors who qualify for an intensive work-study experience. Students seeking further information on the Institute of the Arts should consult the Institute in 109 Bivins Building, (919) 684-6654.

Institute of Statistics and Decision Sciences

The Institute of Statistics and Decision Sciences, initiated in 1985, focuses upon the application of quantitative methods to the study of decision making under conditions of complexity and uncertainty. This multidisciplinary program draws upon faculty throughout the University to offer training and consultation in statistics, stochastic processes, operations research, game theory, decision analysis, utility theory, and statistical computing. Students interested in the activities of the Institute should consult the office of the Vice Provost for Academic Programs, 212 Allen Building, (919) 684-5830.

Duke University Marine Laboratory

The Duke University Marine Laboratory (DURL) is located adjacent to the historic seacoast town of Beaufort, North Carolina, with direct access to the Atlantic Ocean, Cape Lookout National Seashore Park and the Outer Banks, estuaries, sand beaches and dunes, wetlands, and coastal forests. Because of the richness and diversity of its flora and fauna, the area provides an excellent opportunity for marine biological study. The Marine Laboratory is an interdepartmental teaching and research facility of the University. The departments which are chiefly concerned are biochemistry, botany, chemistry, geology, physiology, and zoology. Academic programs include a spring term and a fall term for undergraduates and three terms of summer school for undergraduate and graduate students as well as a cooperative academic program for students from several colleges and universities. For information concerning application and registration, write to Admissions Office, Duke University Marine Laboratory, Beaufort, North Carolina 28516.

Agreements with Other Universities

Neighboring Universities. Under a plan of cooperation, the interinstitutional agreement among Duke University and the University of North Carolina at Chapel Hill, North Carolina State University at Raleigh, and North Carolina Central University in Durham, a student regularly enrolled in Duke University and paying full fees may enroll for one approved course each semester at one of the institutions in the cooperative program. If the student takes two or more courses during a summer at Duke, one of the courses may be taken at one of the neighboring institutions under this plan. This agreement does not apply to contract programs such as the American Dance Festival.

Approval forms for courses to be taken at these neighboring institutions may be obtained from the offices of the academic deans at Duke. Ordinarily, only those courses not offered at Duke will be approved. Credit so earned is not defined as transfer credit since grades in courses taken under the interinstitutional agreement are entered on the official record and used in determining the quality point ratio. The student pays any special fees required of students at the host institution and provides transportation.

Howard University. Duke students participating in the Duke/Howard University Exchange Program may spend a semester studying at Howard University in Washington, DC, while Howard undergraduates enroll for the same period at Duke. More information about this program, administered by Trinity College, is available at 2022 Campus Drive.

Continuing Education

Academic Study. Local adult residents are encouraged to pursue academic study at Duke (1) as provisional degree candidates, for those resuming or beginning a bachelor's degree; (2) as nondegree students, for those seeking a sequence of undergraduate credit courses; and (3) as students completing the last year of work towards a degree at another institution. These students are given academic and career counseling by the Office of Continuing Education. They are subject to most of the regulations set forth for degree candidates. Continuing education applications may be obtained from the Office of Undergraduate Admissions and must be returned to that office, accompanied by a \$35 application fee, by August 1 for the fall semester and by December 1 for the spring semester.

Adult Counseling Services. Adult Counseling Services assists persons making decisions about returning to work, re-entering school, career planning and assessment, life/work transitions, and individual goal setting. Individual appointments, group sessions, and workshops are held.

Short Courses and Conferences. Short courses (noncredit) in the liberal arts are offered regularly throughout the year for those interested in personal enrichment or career advancement. Conferences, institutes, and training programs are conducted during the academic year and in the summer. Some are residential and others are designed for local participants. Some award continuing education units.

The Institute for Learning in Retirement. The institute is for persons over fifty years of age who recognize in themselves a need to continue learning and sharing knowledge.

For brochures on each program and for fuller information, write or call the Office of Continuing Education, The Bishop's House, East Campus, (919) 684-6259.

Reserve Officer Training Corps

Duke University and the military services cooperate in offering officer education programs to provide opportunities for students to earn a commission in the United States Air Force, Army, Navy, or Marine Corps. The programs are described below, and detailed information on scholarships, entrance requirements, and commissioning requirements is available from the offices of the Department of Air Force Aerospace Studies, the Department of Military Science (Army), and the Department of Naval Science. Courses offered in these departments are described in the chapter "Courses of Instruction" in this bulletin.

The Air Force Reserve Officer Training Corps (AFROTC). AFROTC selects, trains, and commissions college men and women to serve as officers in the U.S. Air Force. Two AFROTC programs are available, a four-year and a two-year program.

The four-year program consists of the General Military Course (GMC) taken during the freshman and sophomore years and the Professional Officer Course (POC) taken during the junior and senior years. Entry into the GMC is open to all freshmen and sophomores. Entry into the POC is competitive and requires successful completion of a four-week field-training encampment at a selected Air Force base during the summer between the sophomore and junior years.

Students interested in the two-year program should submit applications no later than the spring semester of their sophomore year. Entry into the two-year program is competitive and requires the successful completion of a six-week summer field-training encampment prior to entry.

Cadets may compete for three and one-half-, three-, two and one-half-, and two-year scholarships. All scholarship and POC cadets receive a tax-free stipend of \$100 per month. On graduation, cadets are commissioned as second lieutenants in the Air Force Reserve and are obligated to serve four years of active duty. Direct inquiries to the Department of Aerospace Studies, 304 North Building, (919) 684-3641.

The Army Reserve Officers' Training Corps (AROTC). Army ROTC provides students with an opportunity to earn a commission as a second lieutenant in the U.S. Army, U.S. Army Reserve, or Army National Guard while completing requirements for a baccalaureate degree. Two programs are available, a four-year and a two-year program.

The four-year program consists of the Basic Course (freshman and sophomore years) and the Advanced Course (junior and senior years). Direct entry into the Advanced Course is possible under specific circumstances (two-year program). Students wishing to join the two-year program must confer with the Department of Military Science not later than April 1 of their sophomore year. There is only one mandatory summer training requirement, Advanced Camp, which takes place over a six-week period between the junior and senior years. All uniforms and AROTC texts are provided.

Upon commissioning, the service obligation may be served on active duty, in the Army Reserve, or in the Army National Guard, as directed by the Secretary of the Army. At the beginning of the senior year, cadets submit a preference statement concerning the method by which they wish to fulfill their service obligation and the specialty in which they desire to serve. A request to delay the fulfillment of the service obligation in order to attend graduate or professional schooling is also authorized.

Cadets are encouraged to compete for Army ROTC scholarships which pay full tuition, most fees, a generous textbook and equipment allowance, and \$100 per month for each month in school (up to \$1,000 per year). Nonscholarship Advanced Course cadets also receive the \$100 monthly stipend. All of the above benefits are tax-free. Advanced Camp attendees are paid one-half of the basic pay of a second lieutenant.

Detailed information is available from the Department of Military Science, 06 West Duke Building, East Campus, (919) 684-5895.

The Naval Reserve Officer Training Corps (NROTC). The Department of Naval Science offers students the opportunity to become naval officers upon graduation. Selected students may receive up to four years of tuition, fees, uniforms, and textbooks at government expense under the auspices of the Scholarship Program. In addition, scholarship students receive subsistence pay and summer active duty pay of approximately \$1,300 a year. They participate in training courses each summer either aboard ship or at naval shore facilities to augment their academic studies. Four years of active duty service as a Regular Officer is required upon graduation.

Nonscholarship students may be enrolled in the College Program. They take the same courses and wear the same uniform, but attend the University at their own expense. Uniforms and naval science textbooks are provided by the government. During the last two academic years, they are enlisted in the Naval Reserve, receive

\$100 per month subsistence pay, and participate in summer training. Three years active duty service as a Reserve Officer is required upon graduation.

College Program students may compete for scholarship status during the freshman or sophomore years through academic performance, demonstrated aptitude for military service, and nomination by the Professor of Naval Science. Students in either program may qualify for a commission in the Marine Corps through the Marine Corps Option Program. Students seeking further information on the NROTC program may call the Department of Naval Science, Hanes House, (919) 684-3841.

Precollege Program

During the summer of 1986, Duke University will offer a Term II program for academically talented rising high school seniors from across the country. The Precollege Program is designed to provide the academic challenge of college-level courses to qualified college-bound students and to help prepare them for the adjustments they will be making when they enter college as freshmen. Students will enroll in two regular Summer Session classes with Duke undergraduates. Introductory level courses in the humanities, social sciences, natural sciences, and languages will be offered for college credit and there will be a wide range of campus programs and activities available as well. The students will live in supervised, air-conditioned University dormitories, eat their meals in the University dining halls, enjoy the opportunity of studying with distinguished members of the Duke faculty, and will have access to all University libraries and athletic facilities. Special programs organized by the residential staff will include sessions on such topics as research and study skills, communicative skills, health and physical fitness, selection of careers and colleges, and interpersonal relationships. For further information contact the Precollege Program, 01 West Duke Building, Duke University, Durham, North Carolina 27708.

Summer Institute of Languages and Cultural Studies

The Summer Institute of Languages and Cultural Studies sponsored by the Summer Session is planning to offer the following language courses in 1986: Amharic, Arabic, Chinese, French, German, Greek (Modern and Classical), Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Spanish, and Swahili. Some of these languages will be taught as intensive double courses covering the curriculum of a first-year language in six weeks. Most of the courses will be taught by regular Duke faculty members; some will be offered by specialists from other institutions. In addition, courses on American and foreign cultures and civilizations will be offered providing the opportunity to study the languages in their cultural context.

For further information consult the Office of the Summer Session, 121 Allen Building, Durham, N.C. 27706.

Duke Summer Festival of Creative Arts

The Duke Summer Festival of Creative Arts is part of the summer session and an extension of the function of the Office of Cultural Affairs, coordinating the arts in the summer and providing an exciting, artistically stimulating environment for the campus and community. The Ciompi Quartet, Duke's well-known Chamber Music Ensemble, will give several performances. Other special events are planned. Distinguished artists and scholars will be involved in cocurricular sessions. Students will have the opportunity to participate in informal productions.

Summer Theater Institute. The Summer Theater Institute, established for students considering careers in theater, offers intense professional-level training that does not fit the regular school year's activities. Institute instructors are working theater

professionals with extensive teaching experience. Courses involve substantial contact time and carefully prepared assignments. Classes run for several hours and are based on individually rehearsed preparations. Students must be willing to develop the necessary degree of professional concentration. Courses are open primarily to Duke students. With the permission of the Director, students from other institutions may attend.

Primary Stages, a visiting professional theater company from New York City, will conduct developmental rehearsals of new works together with the playwrights in residence. Public showings of the works as they develop are planned. Student participation will be encouraged. The company will also be involved in student workshops and public symposia on the plays under development. Detailed information on faculty and courses may be obtained by writing to Summer Theater Institute, Duke University, Box 6841 College Station, Durham, North Carolina 27708.

The American Dance Festival. The six-week program offers a wide variety of classes, performances, and workshops. For a catalog, write to the American Dance Festival, Duke University, Box 6097 College Station, Durham, North Carolina 27708.

Campus Life and Activities



Student Affairs

The Division of Student Affairs strives to complement the educational mission of the University by helping to relate many of the nonacademic components of the University to the academic experiences of the students. The residence halls, the athletic fields, the Chapel, and many student organizations play an important humanistic and holistic role in the students' university experience by developing leadership qualities, skills in interpersonal relationships, and appreciation for the care of the physical self. Thus, the university experience encompasses collectively the life of the mind, body, emotions, and, indeed, the spirit.

Residential Life

Duke has a long tradition as a residential university and has sought to provide convenient housing for the majority of the undergraduate students. While the University was established to provide a formal educational opportunity for students, Duke has always taken the position that education encompasses social and personal development as well as intellectual growth. In order to facilitate such a holistic approach, Duke seeks to provide a supportive environment substantially anchored in its residential program.

Although freshmen are required to live in the University residence halls, a number of upperclassmen choose to live off campus. Students enrolled beyond their fourth year of the undergraduate program cannot be granted space in University housing. Transfer, part-time, and former students who have been readmitted are not eligible for on-campus housing.

Residence Halls and Apartments. The University accommodates 86 percent of its undergraduates in fifty-nine residence hall living groups located on East, West, and North Campuses and in apartments located on Central Campus. Within one of the residence halls on East Campus, there is an International Living Group which is cosponsored by International House, as well as languages corridors for students interested in speaking French, Spanish, and German.

University housing is considered to include residence hall space as well as Central Campus Apartments. Placement in any of these areas fulfills the University's obligation to house eligible students in University housing.

Freshmen reside in all-freshman houses clustered on several campuses; upper-class students reside not only in all-upperclass residence halls but also in Central Campus Apartments. Residential fraternities are housed in sections of upperclass residence halls; by tradition, sororities are not residential. Freshman housing assign-

ments are made by lottery to the houses in the freshman clusters while upperclass housing assignments are made by a combination of lottery and student choice.

Living groups elect officers and organize social, intramural, and cocurricular programs, and community service projects. All of the residence halls have resident advisers who live in the houses and are members of the staff of the Dean for Residential Life. These graduate and undergraduate students have broad responsibilities in the residential life of the University including counseling students with personal problems, advising the house governments, and serving as resource persons for students. Free on-campus bus service connecting East, West, North, and Central Campuses is provided by the University.

Residence Hall Programming. Academic, cultural, and cocurricular programming is planned and presented throughout the year in the residence halls through the cooperative work of the Office of Residential Life, Trinity College of Arts and Sciences, the School of Engineering, and resident students. There are a number of faculty members in residence in both freshman and upperclass houses. Faculty offices and seminar rooms are also located in several of the freshman houses. The goals of these various residential programs are to enhance the quality of intellectual and social life for the residents on campus, to facilitate student-faculty interaction outside of the formal classroom, and to develop a greater sense of community within the individual residence halls as well as within the greater University.

Living Off Campus. The option of living off campus is available for students after the first semester of their freshman year, and those who choose it may retain their resident status and eligibility for University housing if they follow the proper procedures as published by the Office of Residential Life.

Dining Facilities

Students are able to select from a wide range of dining locations and a large variety of food offerings, all of which are available on their pre-paid dining account (see "Food and Other Expenses" in the chapter "Financial Information"). In addition to two all-you-can-eat cafeterias, Duke University Food Services provides restaurants, snack bars, delis, and a pizza take-out and delivery service. Food service operations are located on each campus.

Facilities on East Campus include the East Court Cafeteria; the Magnolia Room, a formal seated restaurant; The Dope Shop, a snack bar; and the DownUnder, an a la carte restaurant featuring sandwiches and snacks. On West Campus, students may select from the University Room, an a la carte cafeteria; the Blue and White Room cafeteria; the Oak Room, a seated dining restaurant; the Leaf 'n Ladle soup and salad bar; and the Cambridge Inn, a deli, grill, and convenience food shop. The Boyd-Pishko Cafe and the Rathskeller, located in the Bryan University Center, also serve West Campus. The Boyd-Pishko Cafe serves breakfast items, sandwiches, and snacks. Gourmet hamburgers, deli sandwiches, and salads are featured in the Rathskeller. On North Campus, there are the Trent Drive Hall cafeteria; The Sprout, a soup and salad bar; and Gradeli's, a delicatessen. The Pub, a restaurant serving specialty sandwiches, is located on Central Campus. Catering services are also available.

Religious Life

Two symbols indicate how important religion has been to this University since its founding: *Eruditio et Religio*, the motto on the seal of the University, and the location of the Duke Chapel at the center of the campus. People from all segments of the University and the community gather in Duke Chapel on Sunday morning to worship in a service which offers excellent liturgy, music, and preaching. The world's outstanding Christian preachers have preached from the Duke Chapel pulpit.

The University ministers work with the campus ministers and staff from the Roman Catholic, Jewish, and Protestant communities, and with other groups to provide a ministry which is responsive to the plurality of religious interests on the campus.

Through the religious life of the University, students are encouraged to search for meaning, to ask the ultimate questions, to worship, to meditate in the beautiful chapel, to learn from outstanding theologians from a wide array of traditions, and to work to bring about a more just and humane society.

Services Available

Student Health Service. The objective of the Student Health Service is to provide medical care and advice to students. Both the Student Health Services Clinic and the University Infirmary are available to students for that purpose. A separate mandatory fee for this service is assessed and covers most services offered within the clinic or infirmary.

The facilities of the Student Health Clinic are open during both regular and summer sessions to all currently enrolled full-time undergraduate students, as well as to regularly enrolled students in the graduate and professional schools. For treatment of illnesses or injuries, students should first visit the Student Health Clinic. Outside regular clinic hours, students should call or visit the University Infirmary, open 24 hours daily during regular academic sessions. The campus bus makes regular trips to the clinic; emergency transportation to the clinic, infirmary, or Duke Medical Center emergency room can be obtained from the Duke public safety officers or from ambulance services in Durham. Residential staff personnel should be consulted, whenever possible, for assistance in obtaining emergency treatment. For a description of the specific services provided by the clinic and also by the infirmary, see the *Bulletin of Duke University: Information and Regulations*.

The Health Education Staff, located within the student health facility, is available to work with students in making informed decisions that lead to healthy lifestyles at Duke and beyond. Specific areas of concern and interest include alcohol and other drug usage, eating and nutrition, sexual activity, and stress management. Programs, meetings, and consultations are provided for both groups and individuals.

In addition to the Student Health Service, the University makes available a plan of accident and sickness insurance to cover students who are enrolled in the University. This plan is designed to complement services normally not accessible to students through the Student Health Service coverage; it covers students both on and off campus, at home, or while traveling between home and school during the interim vacation periods throughout the one-year term of the policy.

All full-time and part-time degree candidates are required to enroll in the student accident and sickness insurance policy, made available by the University, unless they show evidence that they are covered by other generally comparable insurance. This evidence of comparable coverage is given by completing the appropriate waiver statement contained in the remittance form of the University invoice. This statement requires that the name of the insurance company and the policy number be indicated as well as the signature of the student or parent. While this requirement may be waived by signing the appropriate space on the University invoice indicating a willingness to assume the medical costs of any sickness or accident, the Student Health Service strongly recommends that all students be covered by accident and sickness insurance.

Counseling and Psychological Services. Counseling and Psychological Services (CAPS) provides a coordinated, comprehensive range of counseling and developmental services to assist and promote the personal growth of Duke students. The professional staff is composed of psychologists, clinical social workers, and psychiatrists experienced in working with young adults. They provide evaluation and brief

counseling/psychotherapy regarding a wide range of concerns, including such issues as self-esteem and identity, family relationships, academic performance, dating, intimacy, and sexual concerns. Also provided is career counseling, in which students may receive career testing or work with a computerized career guidance system. A career library with sources of occupational and educational information is maintained. While students' visits with counselors are usually by appointment, emergencies are handled when they arise.

Each year, CAPS offers a series of self-development seminars focusing on skills development and special interests. Topics of previous seminars have included career planning, stress management, social development, communication enhancement, and understanding problems that surround eating.

As Duke's center for administration of national testing programs, CAPS also offers a wide variety of graduate/professional school admission tests and professional licensure and certification examinations. The staff is also available to the entire University community for consultation and educational activities in student development and mental health issues affecting not only individual students but the campus community as a whole. They work with campus personnel, including administrators, faculty, student health staff, religious life staff, resident advisers, and student groups, in meeting needs identified through such liaisons. Staff members are also available to lead workshops and discussion groups on topics of interest to students.

CAPS maintains a policy of *strict confidentiality* concerning information about each student's contact with the CAPS staff. If a student desires that information be released to anyone, written authorization must be given by the student for such release. Evaluation and brief counseling/therapy as well as career and skills development seminars are covered by the student health fee. There are no additional costs for these services.

For additional information, see the *Bulletin of Duke University: Information and Regulations*, or call (919) 684-5100.

Office of Placement Services. The Office of Placement Services is the liaison between the University community and potential employers in business, education, nonprofit organizations, and government. The purposes of the office are to give Duke students opportunities to investigate career options prior to beginning the placement process and to assist seniors in identifying employment opportunities commensurate with their qualifications, interests, and desires. An extensive file of openings for permanent, part-time, and summer employment is available, as is a library of general information about careers, employers, and graduate schools. Staff members are available to discuss career plans; permanent, summer, and part-time employment opportunities; interviewing techniques; and other related matters.

Seniors who are nearing the completion of a degree and are interested in interviews with representatives from business and industry, government agencies, and graduate and professional schools should complete the registration forms in the office in early September. Employer and graduate and professional school representatives visit Duke beginning October 1.

Part-time Employment. A listing of a wide variety of part-time job opportunities on campus and in the Durham area is maintained in the office. All students interested in working during the school year should register at the beginning of the semester. Every effort will be made to help students find jobs consistent with their career interests.

Summer Employment. A file of contacts for summer employment is maintained in the office, and some representatives conduct interviews on campus for these positions. Students interested in summer jobs should contact the office in early October.

Career Counseling. Preliminary exploration of career interests early in the student's academic career is possible through the Career Apprenticeship Program, which offers nonpaid experience in a variety of career fields. This program gives the student the

opportunity to gain practical work experience and to broaden the educational experience by related field work during the undergraduate years. Students may also use the Duke Network file to identify Duke alumni, representing a variety of career fields, who have agreed to talk with undergraduates about various career paths.

Office of Minority Affairs. The Office of Minority Affairs (OMA) is an interdisciplinary/student service component of the University which assists minority students in their adjustment to student life. Although OMA primarily counsels and advises students, the office is also involved in matters relating to policy and circumstances which affect minority students. Appropriate discussions are held with faculty, staff, parents, and/or students.

The office has designed and implemented a variety of programs which are aimed at maximizing students' potential for realizing their academic goals. Three major program components are included in these efforts:

Summer Transitional Program (STP). This program introduces selected precollege students to academic and student life at Duke. Courses in English, mathematics, and study skills are offered to incoming freshman students during the summer preceding matriculation. Individual, group, and peer counseling sessions in STP present students with the opportunity to exchange ideas regarding individual and group concerns. STP students are housed together on West Campus.

Counseling in Academic and Social Affairs (CASA). CASA provides the ongoing leadership of a graduate counselor to each undergraduate student. The counselors visit with students on a regular basis, hold group discussions, and serve as sources of information and referral to all students.

Tutoring Program. This program maintains tutors in mathematics and chemistry on a regular basis for any student seeking assistance. Although many students come to the tutoring program through supportive academic personnel, most are self-referred. Tutoring is encouraged and should be arranged as soon as a need is perceived.

Offices for Program Planning

The University Union. The University Union brings together undergraduate and graduate students, faculty, administrators, employees, alumni, and others through a broad program of lectures, concerts, performing arts, exhibits, games, festivals, crafts, special events, dances, and film and video presentations and productions. It is governed by a Board comprised of representatives of virtually all segments of the University community; the Board also governs the operation of the Bryan University Center, where the Union is located.

The Bryan University Center is the hub of cultural, social, recreational, cocurricular, and service activities for students and other members of the campus community. In addition to the Union, the Bryan Center also houses a cafe, a snack bar, three theaters, a post office, bank services, an art gallery, meeting rooms, offices for student organizations, an information center, a ballroom, a crafts center, a game room, lounges, and a mall. Also located in the Bryan Center are the University stores which provide textbooks, supplies, trade books, magazines and newspapers, health and beauty aids, gifts, and wearing apparel.

Office of Student Life. The Office of Student Life develops and coordinates the new student orientation programs for freshmen and transfer students and works closely with the Freshman Advisory Council (FAC), which is composed of upperclass men and women who are selected for qualities of responsibility and leadership. The members of the Freshman Advisory Council are each assigned a small group of freshmen. During Orientation Week, they welcome their new students and introduce them to the University; during the first semester, they continue their relationship with their

freshmen, helping them make the many adjustments to university life. The office also works with entering transfer students and the Transfer Advisory Committee.

Other responsibilities of this office include coordinating the application of the general rules and regulations of the University, advising the participants in the judicial process, serving as a resource center for handicapped students, advising the Interfraternity and Panhellenic Councils, and acting as a liaison with both the Student Health Service and the Department of Public Safety.

Office of Student Activities. The Office of Student Activities, located in the Bryan Center, is a resource for approximately three hundred University clubs and organizations and provides a congenial atmosphere for club work, with telephones and table spaces available free of charge. There is also a copy service for the convenience of student groups and information about room reservation policies, film showings, office space, and campus funding sources.

The director and program associates are available for advice in planning events, for guidance in establishing new groups, and for information about activities of campus groups. The financial manager oversees the financial affairs of student groups, Greek organizations, and residential living units. This includes processing their financial and payroll transactions; auditing their financial accounts; offering bookkeeping, budgeting, and fundraising workshops for treasurers; and providing financial advice on an ongoing basis.

The office offers a Complementary Education Program with instructional and programmatic aids to foster leadership, organizational, and financial skills among student leaders. An internship/career apprenticeship program provides students with opportunities to gain practical experience and develop job related skills in such areas as accounting, advertising, public relations, editing, administration, and data processing. Also, the office sponsors an annual Student Activities Day, cosponsors Duke/Durham Day with ASDU and the Office of Student Life, coordinates Duke's participation in the Share Your Christmas Program, and participates actively in Black Student Weekend.

Office of Cultural Affairs. The Office of Cultural Affairs is responsible for the creation, coordination, and implementation of many of the cultural and popular programs which occur on campus. The office is directly responsible for the Duke Artists Series; the Chamber Arts Society Series; Quadrangle Pictures (35mm film program); Artsfare, The Summer Festival of Creative Arts; and the scheduling of Page Auditorium, as well as all campus activities. With the exception of athletic events, all campus entertainment programs which require tickets are handled by Page Box Office, an extension of the Office of Cultural Affairs. In addition to overseeing arts-related activities, this office is responsible for publishing and distributing the yearly and weekly editions of the *Duke University Calendar*.

The Mary Lou Williams Center for Black Culture. The Mary Lou Williams Center for Black Culture was dedicated in September, 1983, in memory of the "great lady of jazz" and former artist-in-residence whose name it bears. The culmination of the work and dreams of many people, the center exists to promote and preserve black expressive culture at Duke. It serves as a gathering place for black students, where they can learn more about the beauty and richness of their culture and can with pride share their heritage with other students and members of the Duke community in an atmosphere of racial harmony.

The center is composed of the director's office, two lounge areas, a library, an art gallery, and a large meeting area. This is the site of a variety of programs planned by the director and students, and it can also be reserved by all groups on campus.

International House. International House is the center of cocurricular programs for the more than three hundred students at Duke from seventy-two countries, as

well as for American students who are interested in other cultures, are considering study abroad (see the section on study abroad in the chapter "Special Programs"), or are planning to travel outside the United States. The International Association, which includes a significant number of American members, plans social and cultural programs which emphasize personal contact and informal exchange of ideas among students from diverse backgrounds. Included are weekly open-houses with lectures, films, pot-luck dinners, or parties; periodic trips outside of Durham; and an annual International Day on campus which draws visitors from throughout the area.

Programs which assist students from abroad in participating in the life of the Duke and Durham communities include an intensive orientation program at the beginning of the academic year; the Host Family Program, in which interested international students may become acquainted with American families; and the Speakers' Bureau, which arranges for international students to speak at civic and social groups as well as schools in the Durham community.

International House is cosponsor, with the Office of Residential Life, of the International Living Group, which enables students with a strong international interest to pursue that interest in a residential setting. (See the section on residential life in this chapter.)

The Director of International House also serves as International Adviser. The director and an assistant work with students from abroad in fulfilling the various immigration and tax formalities involved in coming to Duke. Their office is located on the second floor of International House.

Further information may be obtained from International House, 2022 Campus Drive, (919) 684-3585.

Student Organizations

Associated Students of Duke University. The Associated Students of Duke University (ASDU) is responsible for articulating undergraduate student thought on issues relevant to the University and for working to improve the educational process and University environment. The working philosophy of ASDU is that students have the right to participate in the University's decision-making process on matters that directly affect the student body.

The Executive Committee is responsible for the implementation of all legislative action and for the coordination of the organization. It consists of the President, four Vice-Presidents (Executive, Student Affairs, Academic Affairs, and Engineering), an Executive Secretary, an Administrative Secretary, and additional members appointed by the President.

The ASDU legislature is composed of representatives from each undergraduate living group on campus, representatives of students living off campus and on Central Campus, and representatives selected from the entire student body. Within the legislative branch, there are four committees (Academic Affairs, Student Affairs, External Affairs, and Buildings and Grounds) which initiate legislation and projects to benefit the student body. Another legislative committee, the Student Organizations Committee, is responsible for allocating the student activities fee paid by each undergraduate to various chartered clubs and organizations.

ASDU provides several services that directly benefit the student body. They include a legal assistance program, voter-registration drives, a file of typists, a maternity and abortion loan fund, a ride/rider board, a student check cashing service, and a peer course counseling night.

Cultural and Social Organizations. The scope of the more than three hundred student organizations is suggested by a partial listing of their names: Alpha Phi Omega service fraternity, Black Student Alliance, Baptist Student Union, Cheerleaders, International Association, Duke Ice Hockey, Outing Club, Sailing Club, Association



of Duke Women, Model United Nations Club, Photography Group, and the N.C. Public Interest Research Group. Twenty national social fraternities and fourteen national sororities are represented on campus. They are governed by the Interfraternity and Panhellenic Councils, respectively.

Many opportunities are provided on campus in the areas of music and drama. The Chorale, Modern Black Mass Choir, Chapel Choir, Wind Symphony, Marching Band, Symphony Orchestra, and Collegium Musicum are examples of musical organizations. Duke Players perform established and experimental drama; Hoof 'n' Horn presents musical comedy; Karamu performs drama related to the black experience.

Several academic departments sponsor organizations and programs for students with special academic or professional interests. There are over twenty academic department majors unions on campus. There are also academic and leadership honorary societies.

Media. The *Duke Chronicle*, the campus newspaper, publishes five issues weekly and is governed by the Chronicle Board. A humor magazine (*Jabberwocky*), a literary magazine (the *Archive*), a calendar/topical magazine (*The Missing Link*), a feature magazine (*Tobacco Road*), a humanities review (*Eruditio*), a science magazine (*Vertices*), and the *Duke Journal of Politics* are published on a regular basis by students. In addition, a *Teacher-Course Evaluation Book* and a comprehensive yearbook, the *Chanticleer*, are pro-

duced each year. The *DukEngineer*, the official student magazine of the School of Engineering, appears twice each year and contains articles on technical and semitechnical topics as well as other matters of interest to the school. These publications are under the direction of the Publication Board, which chooses the editors and business managers and reviews and approves the financial budgets of all such franchised publications. WXDJ 88.7 FM is the student-managed and programmed radio station, broadcasting to the Duke and Durham communities. Duke Union Community Television (Cable 13) is operated by students and produces color television programs that are broadcast throughout the campus on the University cable system.

Project WILD. Project WILD (Wilderness Initiatives for Learning at Duke) is a unique student organization which, through the ideal of experiential education (learning through doing), tries to ease the transition period into college for Duke students. Run totally by students, the program strives to teach self-worth, group awareness, and an appreciation of nature. WILD, a ten-day course held prior to Orientation Week, runs both biking and backpacking crews through the North Carolina mountains. In addition to this August course, WILD also sponsors activities including weekend trips, house courses, March and May wilderness courses, and a year-round ropes course available to the entire University.

Health, Physical Education, and Recreation

Besides offering a variety of classes (see the chapter "Courses of Instruction"), the Department of Health, Physical Education, and Recreation also sponsors numerous programs for all students in intramurals, sports clubs, and recreation.

The Intramural Sports Program provides an opportunity for every student to participate in organized recreation competition in forty-six activities. The program is comprised of three major areas: men's intramurals, women's intramurals, and co-rec intramurals. It is open to all graduate and undergraduate students as well as to faculty and staff of Duke University. Participation, not skill, is a major factor that is emphasized in the program.

More than thirty-three sports clubs have been chartered by Duke students for those with similar interests to participate in competition and recreational activities. Clubs vary from those which compete with clubs of other universities, such as soccer, rugby, and ice hockey, to those of a more recreational nature such as cycling, scuba diving, and sailing, and one which yearly presents several performances, the water ballet club.

The University's many recreational facilities, available to all students, include the championship Robert Trent Jones Golf Course, tennis courts (some lighted) on both campuses, swimming pools on both campuses, three gymnasiums, a weight training room, squash and racquetball courts, outdoor handball and basketball courts, an archery range, horseshoe courts, an all-weather track, numerous playing fields, jogging trails, and informal recreational areas. Tournaments in recreational sports are often organized and conducted by students. Students may reserve facilities and equipment at designated times.

Intercollegiate Athletics

The Athletic Department fosters intercollegiate athletics by striving for excellence and by providing the best possible framework within which highly accomplished student athletes can compete. The department has a dual responsibility to provide a high-quality athletic program and environment so that all students have the opportunity to compete to the fullest extent of their abilities. Duke is a member of the National Collegiate Athletic Association and the Atlantic Coast Conference (ACC).

The ACC consists of Clemson, Duke, Georgia Tech, Maryland, North Carolina at Chapel Hill, North Carolina State, Virginia, and Wake Forest.

The intercollegiate program for men includes football, cross-country, soccer, basketball, swimming, fencing, wrestling, indoor and outdoor track, baseball, golf, tennis, and lacrosse. The women's athletic program provides intercollegiate competition in basketball, fencing, field hockey, golf, swimming, tennis, volleyball, indoor and outdoor track, and cross country. Freshmen may participate on all varsity teams.

The Director of Athletics and Assistant Directors of Athletics provide departmental leadership and coordinate all athletic policies with the University Athletic Council. The council consists of representatives from the undergraduate student body, the faculty, the administrative staff, the trustees, and the alumni. The council meets with the Director of Athletics periodically during the school year. The chairman of the council is the official University representative at national and conference athletic meetings.

The Duke Student Honor Commitment

At the initiation of the President of the University in 1978, Terry Sanford, the members of the Class of 1982 proposed "The Duke Student Honor Commitment." Different from and in addition to the Judicial Code, the Honor Commitment is a personal commitment of honor and integrity which is self imposed and not enforced by an outside authority.

Following is a copy of this commitment:

A unique aspect of a liberal education is its attempt to instill in the student a sense of honor and high principles that extends beyond academics. An essential feature of Duke University is its commitment to an atmosphere of integrity and ethical conduct. As a student of Duke University I accept as my personal responsibility the vigorous maintenance of high standards of honesty, truth, fairness, civility, and concern for others.

My devotion to integrity establishes that I will not cheat in academic work, and that I will adhere to the established and required community code of conduct. According to the dictates of my own conscience, I will report behavior in violation of such established standards. In addition and beyond the requirements of any code or law, I confirm my own commitment to personal honor and integrity in all matters large and small. Even though the ideal of honor is an abstract one, by implementing this ideal, I join the men and women of Duke University in making the concept of honor a reality.

Judicial System and Regulations

Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of scholarship and conduct. Each student is subject to the rules and regulations of the University currently in effect, or which are put into effect from time to time by the appropriate authorities of the University. At the same time, the individual is responsible for decisions and choices within the framework of the regulations of the community, as Duke does not assume *in loco parentis* relationships.

Students, in accepting admission, indicate their willingness to subscribe to and be governed by these rules and regulations. They acknowledge the right of the University to take disciplinary action, including suspension or expulsion, for failure to abide by the regulations or for other conduct adjudged unsatisfactory or detrimental to the University.

Responsibility for prescribing and enforcing rules and regulations governing student conduct rests ultimately with the Board of Trustees of Duke University and, by delegation, with administrative officers of the University. In the undergraduate schools, and in the University as a whole, many of these rules have been established over the years by cooperative action between students, faculty, and administrative officers. Representative student organizations, such as student governments and judicial boards, and more recently, community-wide bodies of students, faculty, and administrators,

have initiated proposals for policies and rules necessary to assure satisfactory standards in academic and nonacademic conduct. These proposals have been accepted by University officers and have become a substantial, if not all-inclusive, body of rules governing student life at Duke. For current regulations, refer to the *Bulletin of Duke University: Information and Regulations*.

Students in Trinity College of Arts and Sciences and in the School of Engineering constitute an undergraduate community whose members are subject to the Undergraduate Community Code. Violations of the code and of certain University regulations are adjudicated before the Undergraduate Judicial Board, composed of representatives of the student body, the faculty, and the administration. The constitution of the board, the Judicial Code of the Undergraduate Community, the procedural safeguards, and rights of appeal guaranteed to students are published in the *Bulletin of Duke University: Information and Regulations* for the undergraduate community. As provided in the judicial structure of the University, each residential unit may have a judicial board which has jurisdiction over all offenses involving violations of regulations relating to dormitory procedures and social regulations not covered by the undergraduate community code or University policies and regulations. The Residential Judicial Board may function as an appellate body in cases involving appeals from the individual house judicial boards and has original jurisdiction in disputes involving two or more dormitories. For further information, refer to the *Bulletin of Duke University: Information and Regulations*.

Student Discrimination Grievance Procedures

The Duke University policy on nondiscrimination is set forth on the credits page of this bulletin. Procedures for investigation and remedy of any complaint and for appeal of any decision are detailed in the *Bulletin of Duke University: Information and Regulations*.

Student Obligations and Requirements

Students are expected to meet academic requirements and financial obligations, as specified elsewhere in this bulletin, in order to remain in good standing. Certain nonacademic rules and regulations must be observed also. Failure to meet these requirements may result in dismissal by the appropriate officer of the University.

Admission



Principles of Selection

James B. Duke, in his Indenture of Trust, requested that “great care and discrimination be exercised in admitting as students only those whose previous record shows a character, determination, and application evincing a wholesome and real ambition for life.” In this light, and in view of the institution’s limited enrollment, Duke University looks beyond the basic characteristics of academic competence possessed by the majority of applicants. It seeks, in each prospective student, regardless of race, sex, color, religion, handicap, or national origin, not only evidence of intellectual promise and maturity of judgment, but also a degree of positive energy. Often, this energy is expressed in the form of special talents and accomplishments; it is seen consistently in a student’s determination to make creative use of the opportunities and challenges posed by Duke University.

Requirements for Application

As there are occasionally changes in admission policies or procedures after the printing deadline for the *Bulletin of Duke University: Undergraduate Instruction*, candidates are urged to consult the *Bulletin of Duke University: Information for Prospective Students* for specific admissions information, dates, and policies.

DEGREE STATUS

Although there are no inflexible requirements as to subject matter, students are urged to choose a broad and challenging high school program. At least twelve units of acceptable college preparatory work must be presented for review. Applicants to the School of Engineering are advised to take four units of mathematics and at least one unit of physics or chemistry.

The Scholastic Aptitude Test (SAT), given by the College Board, and three Achievement Tests (one of which must be English Composition, with or without essay) are required of all candidates for freshman admission and must be taken by the spring of the junior year for Early Decision and by January of the senior year for April Notification. Since placement in foreign language study and fulfillment of the foreign language requirement can be determined by an Achievement Test score, it is recommended that a candidate who has studied a foreign language take the Achievement Test in that language. Candidates may submit results of the American College Testing Program (ACT) in lieu of SAT and Achievement Test scores, provided the test is taken by December of the senior year for April Notification applicants and by June of the junior year for Early Decision applicants; the scores must be made available to the

Admissions Committee thirty days before the decision date. Candidates for the School of Engineering who elect to take the College Board test battery are required to take an Achievement Test in mathematics, either level 1 or level 2.

NONDEGREE STATUS

Summer Session. Persons who are or were at the time of leaving their home institutions in good standing in accredited colleges or universities may be admitted for summer study only by the Director of the Summer Session.

Continuing Education. Admission as a nondegree student at Duke is limited to: people residing in the area who, because of family and work responsibilities, have no other access to education; Duke graduates of the preceding year; people who will be moving to the area and who will reside here for a substantial period of time; local high school students; and Duke University employees. These students are given academic and career counseling by the Office of Continuing Education; they are subject to most of the regulations set forth for degree candidates.

Application Procedures

DEGREE STATUS

A *Bulletin of Duke University: Information for Prospective Students*, which contains the first part of the application, may be obtained from the Office of Undergraduate Admissions, Duke University, Durham, North Carolina 27706. A nonrefundable processing fee of \$35 must accompany the first part of the application.

A personal interview at Duke is not required for admission; students who find it possible to visit the campus, however, may write for an interview or participate in one of the group information sessions held during particularly busy periods. Interviews cannot be granted from January through April, when applications are under review.

April Notification. Candidates for admission to the freshman class must submit the first part of the application by December 15 and final applications no later than January 15 of their senior year in secondary school. Decisions are mailed from the University by April 15, and accepted candidates are expected to reserve a place in the class by May 1 with a nonrefundable deposit of \$400.

Early Decision. Students for whom Duke is a clear first choice may apply for Early Decision. Candidates who apply for Early Decision are required to sign a statement confirming their commitment to enroll at Duke if they are admitted in the Early Decision process and to withdraw applications from other colleges and universities as soon as they learn of their admission to Duke. Secondary school counselors and parents are also asked to sign the Early Decision Agreement.

Students applying for Early Decision should submit the first part of the application by October 8. Deadline for final applications is November 8. The SAT or the ACT must be taken in the spring of the junior year. Achievement Tests should also be taken in the spring since Early Decision applicants who have not completed their Achievement Tests are likely to be deferred to April Notification. Applicants are notified of their status—admit, defer, or reject—by December 15. Admitted students pay a nonrefundable deposit of \$400 by January 5. The credentials of candidates who are deferred are considered along with those of students who request an April 15 decision. Deferred students are no longer bound by the Early Decision Agreement and are free to accept offers of admission from other colleges and universities.

This plan is designed to give students who know Duke is their first choice a means of indicating that commitment to the University and of receiving a decision early enough to eliminate the necessity of applying to several colleges.

Midyear Admission. Midyear admission allows a limited number of freshmen to begin their college work a semester early or to postpone matriculation for a semester. Midyear applicants are expected to complete all the requirements for fall admission. The application deadline for new candidates is September 15 for the first part of the application and October 15 for the final application; students will be notified of the decision on their applications by November 15, with the expectation that those who are accepted will reply by December 1 with a nonrefundable deposit of \$400.

Transfer Admission. Transfer admission from other accredited institutions may be arranged for a limited number of students each semester. Because the transcript of at least a full year of academic work is preferred by the Admissions Committee, and because transfer students are required to spend their last two years at Duke, most candidates apply to Duke during their third or fourth semester in college. Candidates submit official transcripts of all work completed at other accredited colleges, high school records, scores on the Scholastic Aptitude Test, and employment records if there has been an extended period of employment since graduation from secondary school, along with completed application forms. See the section on transfer credit in the chapter "Academic Procedures and Information."

All students admitted as transfers should expect to be responsible for their own off-campus housing arrangements for each academic term. Residence halls are available for summer occupancy only. The Office of Housing Management provides assistance to students who seek housing and/or roommates.

June (Term II, summer session) and September (fall semester) transfer students meet a March 1 deadline for the first part of the application and an April 1 final application deadline, learn of their decisions by May 15, and respond to the University by June 1 with a nonrefundable deposit of \$300. January transfer students submit the first part of the application by September 15 and final applications by October 15, learn of their decisions by November 15, and reply to the University by December 1.

NONDEGREE STATUS

Summer Session. Application forms and schedules of courses may be obtained by writing or calling the Office of the Summer Session, 121 Allen Building, Duke University, Durham, North Carolina 27706; (919) 684-2621. No application fee is required.

Continuing Education. Applications may be obtained from the Office of Undergraduate Admissions and must be returned to that office, accompanied by a \$35 application fee, by August 1 for the fall semester and by December 1 for the spring semester.

At least four courses must be completed successfully before a nondegree candidate may apply for degree candidacy. Students who plan to complete the four courses should not expect automatic admission to the University. More detailed information is available from the Office of Continuing Education, The Bishop's House, Duke University, Durham, North Carolina 27708.

READMISSION OF FORMER STUDENTS

A student who desires to return, following withdrawal from college, should apply to the appropriate college or school. (See the section on readmission procedures in the chapter "Academic Procedures and Information.") Students who have been withdrawn from the University for five or more years must submit a new application to the Office of Undergraduate Admissions.

Financial Information



Tuition and Fees

No college or university can honestly state that an education at the college level is inexpensive. Fees paid by students cover less than half the cost of their instruction and the operation of the University. Income from endowment and contributions from alumni and other concerned individuals meet the balance and assure each student the opportunity to pursue an education of unusually high quality.

Students are urged to give their attention first to the selection of institutions which meet their intellectual and personal needs, and then to the devising of a sound plan for meeting the cost of their education. This process will require an in-depth knowledge of both the University's financial aid program and the resources of the student's family. A brochure describing in detail the various forms of financial aid may be obtained from the Office of Undergraduate Financial Aid, Duke University, Durham, North Carolina 27706.

Estimated Expenses.* Certain basic expenditures, such as tuition, room, and board, are considered in preparing a student's budget. These necessary expenditures, with a reasonable amount allotted for miscellaneous items, are shown below:

	<i>Academic Year, 1986-87 (two semesters)</i>	<i>Two Summer Terms, 1986 (one semester equivalent)</i>
Tuition	\$9,180†	\$2,880-\$3,360
Residential Fee		
Single Room	\$1,834-\$2,406	\$1,252
Double Room	\$1,379-\$1,814	\$626
Food		
100% board plan	\$2,080	\$882
75% board plan	\$1,652	\$662
Books and Supplies	\$431	\$210
Student Health Fee	\$202	\$66

†For the School of Engineering, the tuition is \$9,850.

It should be realized that additional expenses will be incurred which will depend to a large extent upon the tastes and habits of the individual. The average Duke student, however, can plan on a budget of approximately \$14,320 for the academic year.* The budget estimate for the summer (two terms, one semester equivalent) is \$5,090.* These budgets are all-inclusive except for travel costs and major clothing purchases.

Registration Fees and Deposits for Fall and Spring. On notification of acceptance, students are required to pay a nonrefundable first registration fee of \$30 and

*The figures in this section are projections and are subject to change.

to make a deposit of \$300. The deposit will not be refunded to accepted applicants who fail to matriculate. For those who do matriculate, \$100 of the deposit serves as a continuing residential deposit for successive semesters, and the remaining \$200 serves as a continuing registration deposit.

Late Registration. Continuing students who fail to register during the registration period must pay a fee of \$25 to the Bursar.

ROTC Deposit. An Air Force ROTC deposit of \$10 is required of students enrolling in air science to cover possible loss of military equipment issued to them. This deposit is refunded to the student upon return of issued equipment.

Part-Time Students. In the regular academic year students who register for not more than two courses in a semester are classified as part-time students. Part-time students will be charged at the following rates: one course, \$1,148 (\$1,230 for engineering courses); half course, \$574 (\$615 for engineering); quarter course, \$287 (\$307.50 for engineering). Registration for more than two courses requires payment of full tuition. Graduate students registered for undergraduate courses will be assessed three units for nonlaboratory courses and four units for laboratory courses. Men and women in nondegree programs who are being considered for admission to degree programs, as designated by the Office of Continuing Education, pay fees by the course whether the course load is one, two, or three courses.

Auditors. Auditing one or more courses without charge is allowed for students paying full fees, provided that the consent of the instructor is obtained. Students who are enrolled for one or two courses may audit other courses by payment of \$115 (\$123 for engineering) for each course audited. With the consent of the appropriate instructor and the Director of Continuing Education, graduates of Duke may audit undergraduate courses for the above payment per course.

Payment of Accounts for Fall and Spring. The Office of the Bursar will issue invoices to registered students for tuition, fees, and other charges approximately four to six weeks prior to the beginning of classes each semester. The *total amount due* on the invoice is payable by the invoice late payment date which is normally one week prior to the beginning of classes. As part of the admission agreement to Duke University, a student is required to pay all invoices as presented. If full payment is not received, a late payment charge as described below will be assessed on the next invoice and certain restrictions as stated below will be applied. Failure to receive an invoice does not warrant exemption from the payment of tuition and fees nor from the penalties and restrictions. Nonregistered students will be required to make payment at the time of registration.

Multiple Payment Plan. The Multiple Payment Plan allows students and their parents to pay part or all of the annual financial obligations for tuition, room, and board in nine equal installments. An annual non-refundable participation fee is charged, but no interest is charged. The initial payment is made by check and subsequent payments are made by bank drafts. Questions regarding this plan should be directed to the Office of the Bursar, 102-F Allen Building, (919) 684-3531.

Guaranteed Tuition Plan. The Guaranteed Tuition Plan offers undergraduate freshmen who are not recipients of University supported financial aid and their parents the opportunity of paying four years of tuition in 44 installments. The tuition is guaranteed at the freshmen fall semester rate and financed at a set rate of interest. The initial payment is made by check and subsequent payments are made by bank drafts. Questions regarding this plan should be directed to the Office of the Bursar, 102-F Allen Building, (919) 684-3531.

Late Payment Charge. If the "Total Amount Due" on an invoice is not received by the invoice late payment date, the next invoice will reflect a penalty charge of 1-1/4 percent per month assessed on the past due balance regardless of the number of days past due. The "Past Due Balance" is defined as the previous balance less any pay-

ments and credits received on or before the late payment date and also any student loan memo credits related to the previous balance which appear on the invoice.

Restrictions. An individual will be in default of this agreement if the *total amount due* on the student invoice is not paid in full by the invoice late payment date. An individual who is in default will not be allowed to register for classes, receive a copy of the academic transcript, have academic credits certified, be granted a leave of absence, or receive a diploma at graduation. In addition, an individual in default may be subject to withdrawal from school.

Tuition and Fees for Summer Session. Tuition for undergraduates is \$720 for each nonlaboratory or 3 semester hour (s.h.) course, \$960 for each laboratory or 4 s.h. course, \$480 for each half course (2 s.h.), and \$1,440 for each one and one-half course program (6 s.h.) offered at the Marine Laboratory.

Tuition for graduate students taking an undergraduate course is as indicated above.

Health Fee. All Duke students and all full-time non-Duke students are required to pay \$33 per term. All students at the Marine Laboratory are required to pay \$27 per five-week registration period.

Scuba Diving Fee. A fee of \$60 will be charged for each scuba diving class. An additional fee is required for basic certification (\$75) and for open water certification (\$100) and will be collected in class.

Studio Fee. A fee of \$40 will be charged for each studio art class.

Music Fee. A fee of \$100 will be charged for Music 081. A fee of \$200 will be charged for Music 091.

Auditing Fees. With permission of the instructor and the Director of the Summer Session, students registered for a full course program (two courses) may audit nonlaboratory courses except physical education and dance activity courses, studio art courses, applied music courses and foreign programs. No extra charge is made.

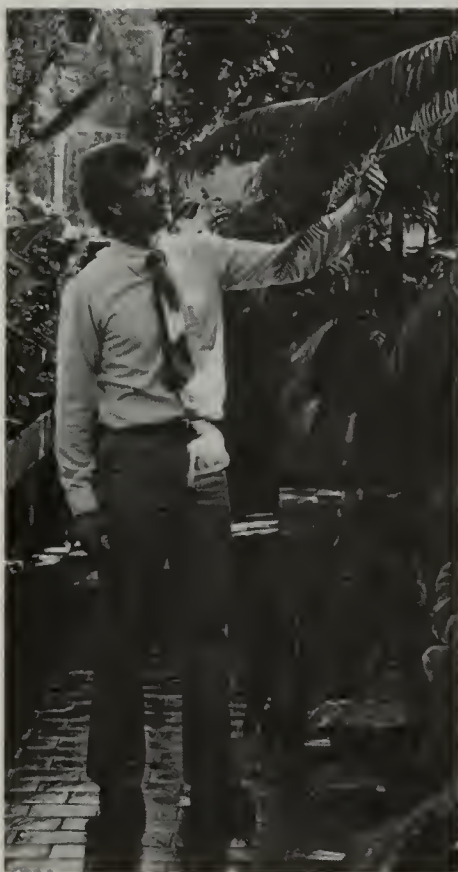
Students carrying less than a full course program may be granted permission by the instructor and the Director of the Summer Session to audit a course (the above exceptions apply) but must pay half the University fee for the course.

Payment of Tuition and Fees. The University does not mail statements for summer session tuition and fees. All tuition and fees should be paid in the Office of the Bursar (101 Allen Building) at least five full working days prior to the first day of class (see summer session calendar). Students registering by mail may forward payment to the Office of the Bursar, 102F Allen Building, Duke University, Durham, North Carolina 27706. Failure to pay tuition and fees by the end of the drop/add period will result in administrative withdrawal of the student (see the section on refunds and withdrawal charges concerning penalties in this chapter). Students who have been withdrawn may not attend class or subsequently be registered for the term. Students who are unable to meet these deadlines should consult with the Bursar prior to the deadline.

Late Fee. Students who fail to register and pay all tuition and fees before five full working days prior to the first scheduled class day of a given course will pay an extra charge of \$25.

Transcripts. Requests for transcripts of academic records should be directed to the Associate Registrar. Ten days should be allowed for processing. A fee of \$1, payable in advance, is charged for each copy.

Duke Employees. Employees may request through the Office of Continuing Education permission to take for credit or audit up to two courses during any one semester or one during a summer term. Permission may be granted based on the individual merits and circumstances of each application. A formal application must be submitted by December 1 for the spring semester, or August 1 for the fall semester. Full-time employees with one or more years of service who receive permission to take such



courses will be charged one-half the tuition rate shown above for part-time students during the fall and spring and one-half of the summer tuition rate. Qualified employees should consult the Benefits Office, Parking Garage II, (919)684-6723 at least one week in advance of payment date to obtain a tuition reduction voucher to cover the remaining half of the tuition.

Living Expenses*

Housing for Fall and Spring. In dormitories for undergraduate students the housing fee for a single room ranges from \$1,834 to \$2,406 for the academic year; for a double room, the fee ranges from \$1,379 to \$1,814 per occupant.

To reserve University housing for the fall semester, returning students who are eligible for and wish to occupy such housing must make a \$50 prepayment of the housing fee at a designated time during the spring semester.

Detailed information concerning the student's obligations under the housing contract and the consequences of failure to comply are published in the *Bulletin of Duke University: Information and Regulations*.

Housing for Summer. For detailed information on types and costs of accommodations available at Duke University for the summer session write: Department of Housing Management, 016 West Union Building, Duke University, Durham, North Carolina 27706.

Food and Other Expenses. Duke University Food Services and Duke University Store operations are located on campus to serve the needs of the Duke community. The University Identification card, known as THE DUKE CARD, can be used to gain access to pre-paid accounts and make purchases in many Duke University facilities.

There are two accounts: the dining account, used to purchase food items in Duke University Food Services (DUFS) and Duke Stores operations; and the flexible spending account, used to purchase any goods or services of DUFS, Duke Stores, and other operations.

All students living in campus residence halls are required to participate in the dining plan account and may choose one of five plans ranging in cost from \$668 to \$1,040 per semester. The flexible spending account is optional and may be set for \$50 or more.

Information regarding these accounts is sent to matriculating students. For more information about campus retail and food facilities, see the chapter "Campus Life" in this bulletin.

Fall and Spring Refunds

In the case of withdrawal from the University, students or their parents may elect to have tuition refunded or carried forward as a credit for later study according to the following schedule:

<i>Withdrawal</i>	<i>Refund</i>
Before classes begin	Full amount
During first or second week	80 percent
During third, fourth, or fifth week	60 percent
During sixth week	20 percent
After sixth week	None

*The figures contained in this section are projections and are subject to change prior to the beginning of the fall 1986 semester.

Tuition charges paid from grants or loans will be restored to those funds on the same pro rata basis and will not be refunded or carried forward. In the event of death, a full tuition and fees refund will be granted.

In the case of changing category from full-time to part-time, dropping special fee courses (e.g., music, art, golf), or dropping audit courses, a full refund will be granted students during the drop-add period. Subsequent to the drop-add period changes of category will not be allowed from full-time to part-time. Students may, however, withdraw from courses after the drop-add period with no refund or add new courses if the proper tuition is paid.

The registration deposit will be refunded to students whom the University does not permit to return, who graduate, or who request the refund prior to registration, thereby indicating their intention not to return for the following semester. The registration deposit will not be refunded to students who register for the following semester but fail to enter. Arrangements for refund of the \$100 residential deposit are described in the housing contract.

Summer Withdrawal Charges and Refunds†

Drop or Withdrawal Charges. Students who will not be attending a summer term or course for which they have registered must officially drop the course(s) prior to the beginning of class whether or not they have paid tuition and fees. (See the section on course changes for the summer term in the chapter "Academic Procedures and Information.") Students who fail to drop the course(s) will be charged 20 percent of the tuition plus the health fee.

Refunds. Students who will not be attending a summer term or course for which tuition and fees have been paid are eligible for refunds following these policies:

1. There is no refund of tuition and fees if the student drops a course(s) or withdraws from the term after the third day.
2. Eighty percent of the tuition is refunded if the student officially drops a course(s) or withdraws from the term during the first three days. The health fee is not refunded. There is no charge for drop/adds that result in no change in tuition in the same term.
3. Full tuition and fees are refunded if the student officially drops a course(s) or withdraws from the term before the first day.

Student Aid

Duke University is strongly committed to its financial aid program and for the four years of undergraduate enrollment will meet 100 percent of the demonstrated need of each admitted student. The University's aid program includes both merit and need-based scholarships, work-study, the National Direct Student Loan Program (NDSL), and the Guaranteed Student Loan Program (GSL). Students needing assistance are strongly encouraged to apply for financial aid. Students receiving financial aid will be notified at the same time that they are offered admission.

For the student with demonstrated need, the net cost of an education at Duke University will generally be no greater than that for attendance at any college or university. It is the intention of the Office of Undergraduate Financial Aid to set each award at a level consistent with a student's ability to meet the costs of attending Duke University. This will be done by taking into consideration the contribution that can reasonably be expected from the student, the family, and any available outside sources. During the current academic year, over one-third of the student body receives more than twelve million dollars in aid of various types.

†This policy does not apply to foreign programs.

Financial Aid for Entering Freshmen. Candidates should initiate their application for financial aid concurrently with their application for admission during the fall semester of their senior year in secondary school. Instructions concerning the specific requirements and deadline dates will accompany application materials. The Financial Aid Form (FAF) must be submitted to the College Scholarship Service. In divorce cases, the University requires both parents to complete and submit a FAF which may be obtained either from a high school guidance counselor or from the Financial Aid Office. A notarized copy of all pages, including schedules and attachments, of the parents' current Federal Income Tax Form must be submitted to the financial aid office on or before May 1. Information provided on the FAF will be validated through the use of the tax return.

Financial aid recipients wishing to operate a motor vehicle on campus must first register it with the Financial Aid Office. As an automobile represents an asset, the value of a financial aid recipient's car will be considered in the estimation of a student's need. As a general rule, a student's annual contribution will be increased by 35 percent of the value of the car.

Renewal of Financial Aid after the Freshman Year. Each year students must file an application for renewal of financial aid. This application must include a new Financial Aid Form and a notarized copy of all pages, including schedules and attachments, of the parents' current Federal Income Tax return. Application packets may be picked up in the Financial Aid Office in late December.

To have financial aid renewed, a student must meet the continuation requirements outlined on pages 24, 25, 34, and 35, as appropriate. Students not qualifying for financial aid due to their inability to meet these requirements may appeal directly to the Financial Aid Office. Students holding merit scholarships are required to maintain an average considerably higher than the minimum required for need-based financial aid recipients. Specific details regarding retention standards will be provided to scholarship winners.

Summer School Financial Aid. Financial aid is available for each summer session. Interested students can obtain specific details and an application through the Financial Aid Office in March of each year.

Types of Financial Aid. Gift scholarships or grants, long-term loans, and employment are integral parts of the financial aid program, and some portion of the aid offered an undergraduate is normally in each of these forms.

The work-study opportunity and loan(s) offered as financial aid are considered to be the self-help portion of the award. The standard aid package at Duke provides that the first \$2,600 to \$3,500 of each student's need be awarded in the form of self-help funds. Funds awarded in excess of this amount will be grant funds. This combination of University grant funds and opportunities for self-help enables Duke to extend its resources to a larger number of deserving students. A student may choose not to accept any portion of an aid award with the understanding that the responsibility for providing the dollar equivalent is accepted by the individual.

Duke has several scholarships based on need which are available from personal endowments and corporations. Some are intended for entering freshmen, whereas others are awarded to upperclass students. These scholarships may be based on achievement in a particular field or on an outstanding overall record.

Gift Scholarships. The following are among the named gift scholarships offered through Duke University:

Angier B. Duke Memorial Scholarships. The Angier B. Duke Memorial Scholarships, competitively awarded on the basis of academic merit, have been established to encourage the intellectual achievement of men and women by recognizing those who possess outstanding academic and leadership abilities. Candidates are selected on the basis of intellectual performance, creative talent, and promise of being eventual leaders in

whatever field of endeavor they choose. The scholarship is a four-year program (eight semesters), and a student's continuation in the program is contingent upon good academic performance. All 1985-86 scholarship holders received \$8,270 if enrolled in Trinity College of Arts and Sciences, and \$8,870 if enrolled in the School of Engineering. Approximately thirty scholarships are awarded each year. Students demonstrating additional need will receive a grant from Duke University funds up to the amount needed. All Angier B. Duke Scholars participate in a six-week summer study program at Oxford University in England after the junior year. Under the program the scholarship pays tuition, single room accommodation, full board, designated excursions for all scholars, and an allowance for transatlantic air fare between New York and London. Those choosing not to participate in the Oxford program are eligible for a \$2,000 grant for an approved independent project. At least one of the four years of the scholarship could be used abroad on an approved program.

W. N. Reynolds Memorial Scholarships. Recipients of these awards are students with outstanding ability and/or need who show promise of constructive leadership. In considering candidates for the awards, consideration will be given in the following order: (1) children of employees of R. J. Reynolds Tobacco Company or any of its affiliates or subsidiaries; (2) children of families residing in Forsyth County, North Carolina; and (3) other candidates who are residents or natives of North Carolina. There are a number of awards available for each freshman class with a value of \$500 to \$3,600 annually.

A. J. Fletcher Scholarships. These music department scholarships are given to students who can demonstrate, by tape or audition, talent and achievement in instrumental or vocal performance. These awards are \$500 per year and are renewable annually for up to four years. Although recipients are not required to major in music, they are expected to study privately and to participate in departmental performing groups.

United Methodist Scholarships. A number of United Methodist Scholarships, valued at \$500 per year, are available on a basis of demonstrated need to Methodist students who have given evidence of leadership in their local Methodist Youth Fellowship groups.

Alice M. Baldwin Scholarships. One or more of these scholarships, varying in amount from \$500 to \$1,500, are awarded to women who are rising seniors in Trinity College of Arts and Sciences on the basis of scholarship, character, and leadership.

Evelyn Barnes Memorial Scholarship. One \$400 or two \$200 grants are awarded to undergraduate women who are contributing to the musical life of the University. Scholarship, character, and leadership are considered. Recommendation by a member of the music faculty is required.

Panhellenic Scholarship. A scholarship of approximately \$500 is awarded to an upperclass woman in Trinity College of Arts and Sciences on the basis of scholarship, character, leadership, and service.

J. A. Jones Memorial Scholarships. The scholarships, sponsored through the Jones Fund for Engineering, are awarded to engineering students whose outstanding academic and personal qualifications suggest that they will become leaders in a technological society. The awards range from a yearly sum of \$1,000 to \$3,000, depending on the degree of need.

Robert H. Pinnix Scholarships. The Robert H. Pinnix Scholarships are awarded annually to two upperclassmen enrolled in the Duke School of Engineering. The award is based upon demonstrated ability, excellence in engineering, and financial need.

Scholarships for Foreign Students. A limited number of awards will be made each year to qualified students from other countries who enter as freshmen. Candidates for these awards are required to submit the Application for Scholarship and Financial Aid and the Financial Aid Application for Foreign Students provided by the Office of Undergraduate Financial Aid of Duke University. Two named awards are awarded to currently enrolled foreign students: the Carol Cranmer Scholarship (named for a former student) and the Roberta Florence Brinkley International Scholarship (named for a former Dean).

The Mary Duke Biddle Scholarship in Music Composition. This scholarship with a stipend of \$3,500 per year is available to a member of each entering class. It is renewable from year to year so long as the student does satisfactory work. Students wishing to apply for this award will be required to submit examples of their composition. Eligibility is limited to students planning to major in music.

AFROTC College Scholarship Program. Students can apply for three-year scholarships during their freshman year and two-year scholarships during their sophomore year. Scholarships are available to students who qualify for flight training and to students who major in certain scientific or engineering fields. The scholarships include tuition, fees, and textbook reimbursement, plus a \$100 per month tax-free allowance.

Army ROTC Scholarship Program. All freshman and sophomore students are encouraged to apply for Army ROTC scholarships. Awarded without regard to academic major, these grants pay tuition, fees, and textbook/equipment costs in addition to providing a tax-free monthly stipend of \$100 for the balance of the student's normal period to graduation. Commissioned service, following graduation, can be either on active duty or with the reserve forces. Additional information concerning Army ROTC scholarships is available from the Professor of Military Science.

NROTC College Scholarship Program. This program provides for up to four years' tuition and textbooks, laboratory fees, and a \$100 per month stipend. These scholarships, based upon academic achievement, leadership potential, and overall performance, can be awarded at any stage of the student's college career through either a nationwide selection process or by the Professor of Naval Science at the University. In

addition, two other two-year scholarships are available to rising juniors: one leads to a career in nuclear power, and the other follows a summer attendance at the Naval Science Institute at Newport, Rhode Island. For further information on any of the above scholarship programs, contact the Professor of Naval Science.

The Minnie Happer Pruden Scholarships. These scholarships of \$1,000 are available to the daughters of Episcopal clergymen.

The Huguenot Scholarship. One scholarship of \$1,000 per year is available from the Huguenot Society of America to a descendant of a Huguenot.

Reginaldo Howard Scholarships. These scholarships, awarded annually to freshman minority students, are provided to honor the late Reggie Howard, first black president of the student government. Ten scholarships for \$3,000 are awarded each year. Scholarships are available for the four years of undergraduate study as long as the student maintains a 3.0 average.

The Anne McDougall Memorial Award. The Anne McDougall Memorial Award for Women is awarded each year to one woman student studying psychology or a related field. Administered through Women's Studies, this \$1,000 award is intended to provide encouragement and support for women who wish to pursue academic study and continue in the area of human service.

Alumni Endowed Scholarships. Three \$3,000 per year Alumni Endowed Undergraduate Scholarships are awarded to students who demonstrate superior academic ability and leadership potential. These awards are renewable annually, based on satisfactory performance at Duke. Although not restrictive, preference is given to children of alumni.

Scholarships for North Carolina Residents.

The Benjamin N. Duke Scholarship Fund. Established by the Duke Endowment to honor Benjamin N. Duke, this fund is intended to encourage the enrollment of students from North Carolina and South Carolina.

The Benjamin N. Duke Leadership Award. As part of the Benjamin N. Duke Scholarship Fund, these awards recognize and encourage leadership potential and community involvement of students from North and South Carolina. Ten scholarships, valued in excess of \$6,300, are awarded annually. The Benjamin N. Duke Scholarship Fund also funds grants to be used to replace the loan portion of need-based awards received by students from North Carolina.

Trinity Scholarships. Awarded to North Carolinians of exceptional ability, these scholarships are named to honor the fact that Duke University was originally named Trinity College. Trinity scholarships provide each winner an award equal to the value of tuition, fees, room, board, and the cost of a summer of study abroad.

For specific information on the various Trinity scholarships, please consult the Financial Aid Office at 2106 Campus Drive or call (919) 684-6225.

North Carolina Math Contest. Upon enrolling at Duke, each student finishing in the top twenty in the North Carolina Math Contest is eligible to receive a scholarship equal to the amount of tuition. This scholarship is available for each of the four years of undergraduate enrollment as long as the student maintains a 3.0 average.

Duke North Carolina Scholars Awards. Scholarships funded by Duke University are awarded annually to selected incoming freshmen from North Carolina. Scholarships are renewable for the four years of undergraduate study as long as the student maintains a 3.0 average. Scholarships are valued at \$3,000.

J. Welch Harriss Scholarships. Recipients of these scholarships will receive \$1,000 per year without reference to need. If demonstrated need exceeds \$1,000, then the scholarship will be adjusted accordingly. These awards are made to entering freshmen who have achieved outstanding academic records. They are renewable each year as long as the student remains in good academic standing. Consideration will be given in the following order: (1) students from High Point, North Carolina; (2) students from Guilford County, North Carolina; and (3) students from North Carolina.

Alyse Smith Cooper Scholarships. Each year six or more scholarships of various amounts are awarded to students demonstrating both talent and need. Preference is given to students from Alamance County, North Carolina. Majors in music, particularly students of piano, organ, and voice, receive special consideration.

Braxton Craven Endowed Scholarships. Recipients of these scholarships will receive an amount equal to the current tuition at Duke. Braxton Craven scholars will be chosen on the basis of outstanding academic and extracurricular achievement. First preference is given to Davidson County, North Carolina, residents and second preference to students from North Carolina. The scholarships are approved on a continuing basis, providing satisfactory academic progress is achieved.

North Carolina Legislative Tuition Grant. The North Carolina General Assembly has established a program of tuition grants available to North Carolina residents who are full-time students at private colleges and universities in the State of North Carolina. The grant for each eligible student is \$475 per semester. Applications will be mailed to all eligible students during the summer. In the case of a need-based financial aid recipient, this grant reduces a student's tuition and therefore his budget. All qualified need-based aid recipients are required to apply for this grant.

State Contractual Scholarships for Needy North Carolinians. Funds provided by the State of North Carolina through the Legislative Grant Program are distributed to needy North Carolinians qualifying for the State

Contractual Scholarship Program. Application is made through the College Scholarship Service's Financial Aid Form.

In addition to the above, Duke offers other special programs to North Carolina residents. These include a work-study program designed to assist students not qualifying for financial aid and a special reduced self-help plan for needy North Carolinians.

Loans. The loan programs which are available to students through Duke University are listed below:

National Direct Student Loan Program. Loan funds supplied by the federal government and Duke University through Part E of Title IV of the Higher Education Act of 1965 are available to qualified students. Repayment of loans under this act normally begins six months after the student is graduated or leaves college, with complete payment scheduled within a ten-year period. Interest accrues at the rate of 5 percent annually, commencing six months after the borrower ceases to be at least a half-time student at an institution of higher education. This loan is part of the student's financial aid award.

Guaranteed Student Loan Program. Loans under the Guaranteed Student Loan (GSL) program are available from banks or other incorporated state lending agencies. Duke University can arrange an alternate lender for students who are unable to obtain GSLs through their home state agencies or local banks. Need as established by the federal government's formula will be a factor in the University's decision regarding GSL applications. The program enables students from families with adjusted gross incomes of \$30,000 or less to qualify automatically for these loans; students from families whose most recent yearly adjusted income exceeds \$30,000 may qualify by submitting a GSL Needs Test along with the application. The limit on a GSL, which has an interest of 8 percent, is \$2,500 a year. Additional information about this loan program may be obtained from the undergraduate financial aid office.

Parents' Loan for Undergraduate Students Program. Parents may borrow through the Parents' Loan for Undergraduate Students (PLUS) program. Repayment of these loans begins sixty days after loan disbursement. Interest is 12 percent and begins to accrue at the point repayment begins. Interested parents should contact their home state lending agency.



Children of Methodist Ministers. Children of ministers in the North Carolina and the Western North Carolina Annual Conferences of the United Methodist Church may be eligible to receive a partial tuition grant of \$750 per semester for a maximum of eight semesters of undergraduate study at Duke University. Eligibility is met by the parent being in a regular pastoral appointment and resident in one of the conferences. When the parent is in a special appointment and resident in one of the conferences, eligibility will be determined on an individual basis, depending upon the nature of the appointment. In all cases the decision of the University will be final.

Employment. Most financial aid recipients are offered a job as part of their aid package. These jobs require between 10 to 14 hours a week and provide an average stipend of \$1,400. The money is paid directly to the student. The Office of Placement Services maintains part-time employment listings for the campus and Durham area. All students interested in working during the school year should register at the beginning of the semester. Every effort will be made to help students find jobs consistent with their interests.

Duke University also expects that students receiving financial aid will work during the summer. In the summer before entering college, a freshman should save \$1,000 for use during the first year of college. In subsequent summers, the student should save \$1,200 to be used for college expenses.

Tuition Plans. Many families finance a college education with the assistance of an insured tuition payment plan regardless of whether they receive financial assistance from Duke. Although these plans are sponsored by a number of private firms, the University refers parents to plans provided by the Richard C. Knight Insurance Agency, Inc. The company provides the University with the full sum required each semester and arranges a schedule for monthly repayment by the subscribing families. The schedules for repayment vary with the program offered by the company. Additional information on this particular tuition payment plan may be obtained by writing to Richard C. Knight Insurance Agency, Inc., Insured Tuition Payment Plan, 53 Beacon Street, Boston, Massachusetts 02108.

Tuition payment plans are also available through the Tuition Plan, Concord, New Hampshire 03301. Each year the Tuition Plan will send information to all students.

Courses of Instruction



Definition of Terms

Courses taught in 1984-85 or in 1985-86 or scheduled for 1986-87 are included in this chapter with full descriptions. Additional courses, that were taught prior to 1984-85 and that are likely to be taught in the future, are listed separately by number and title only under the heading Courses Currently Unscheduled. For courses which will be offered in 1986-87, consult the *Official Schedule of Courses*.

Introductory level courses are numbered below 100; advanced level courses are numbered 100 and above. Courses numbered 1 through 49 are primarily for freshmen; courses numbered from 200 through 299 are primarily for seniors and graduate students. (See the section on course load and eligibility in the chapter "Academic Procedures and Information.")

Odd-numbered courses are usually offered in the fall semester; even-numbered courses in the spring semester. Double numbers separated by a hyphen indicate that credit is contingent upon completion of both courses. Double numbers separated by a comma indicate that although the course is a year course, credit may be received for either course or both courses.

The following symbols, suffixed to course numbers, identify the small group learning experiences: *S*, seminar; *P*, preceptorial; *T*, tutorial; *D*, discussion section. The *L* suffix indicates that the course includes laboratory experience. *C-L*: denotes a course that is cross-listed or a program under which a course is listed.

Trinity College of Arts and Sciences

Professor White, *Dean of Arts and Sciences and of Trinity College*; Associate Professor Eldridge, *Associate Dean*; Assistant Dean Bryan, *Coordinator of Institutional Research and Special Projects*; Assistant Dean Bryant, *Coordinator of College Re-entry Programs*; Assistant Dean Nathans, *Director of the Premajor Advising Center*; Assistant Dean Nijhout, *Director of Health Professions Advising*; Assistant Dean Wilson, *Coordinator of the Deans' Staff*; Assistant Dean Wittig, *Coordinator of Curriculum*; Assistant Dean Silver

Aerospace Studies—Air Force ROTC (AS)

Professor Haerle, Colonel, USAF, *Chairman*; Assistant Professor Cummings, Major, USAF, *Director of Undergraduate Studies*; Assistant Professors Riley, Captain, USAF and Smith, Captain, USAF

Eligibility Requirements. All freshmen and sophomores, men or women, are eligible to enroll in the General Military Course in the Air Force Reserve Officer Train-

ing Corps. For enrollment in the Professional Officer Course, the student must have completed successfully either the General Military Course or the six-week field training course; must execute a written agreement with the government to complete the Professional Officer Course; must be sworn into the enlisted reserve; and must agree to accept a commission in the U.S. Air Force Reserve upon graduation. In addition, each student must take at least one course in mathematical reasoning prior to graduation/commissioning. All students also will be required to attend one hour of leadership laboratory each week.

General Military Courses

First Year

1. The Air Force Today. Development of aerospace power in the United States; mission, doctrine, and organization of the U.S. Air Force and its relationship to the other services within the Department of Defense. (May not be counted to satisfy graduation requirements.) Half course. *Haerle*

2L. Leadership Laboratory. Instruction in drill and ceremonies, wearing the uniform, giving commands, and other leadership activities. Mandatory for all Air Force ROTC cadets. Must be repeated each semester. No credit. *Staff*

Second Year

51. Development of Air Power. Growth and development of air power from dirigibles and balloons to the present emphasizing evolution of concepts and doctrine governing air power employment in support of national objectives. (May not be counted to satisfy graduation requirements.) Half course. *Smith*

Professional Officer Courses

All students selected to continue aerospace studies pursue the following courses:

First Year

105S. Aerospace Leadership and Management. An introduction to management fundamentals to include the knowledge base and process of managing. One course. *Riley*

106S. Aerospace Leadership and Management. Application of management fundamentals to duties as junior officers/executives to include principles of leadership. One course. *Riley*

Second Year

203. The Problems of Flight. Equivalent to FAA ground school for private pilot certification. Open to all students with consent of instructor. Half course. *Haerle*

205S. National Security Forces in Contemporary American Society. The role of the professional military officer in a democratic society and the environment in which national security policy is formulated. One course. *Cummings*

206S. National Security Forces in Contemporary American Society. The evolution of U.S. nuclear strategy, the international context in which national security policy is implemented, and the military justice system. One course. *Cummings*

Afro-American Studies (AAS)

The program in Afro-American Studies provides instruction directed toward the experience and concerns of black America. The courses encompass the black experience in America and the black experience as illuminated by literary, religious, and

cultural evidence generated by black Americans. The courses in the program are essential components of a liberal arts education and may constitute a major or complement another major. In addition to the courses listed below, many related courses are offered. Descriptions can be found under the Departments of Anthropology, Economics, History, Political Science, Public Policy Studies, Religion, and Sociology. Swahili courses are described under Asian and African Languages. Further information is available in 107 Allen Building.

56. The Black Religious Experience in America. C-L: Religion 56. One course. *Lincoln*

74. Introduction to Jazz. See C-L: Music 74; also C-L: Canadian Studies. One course. *Jeffrey*

138. Political Leadership in the Black Church. C-L: Religion 138. One course. *Lincoln*

144. Black Cults and Sects in America. C-L: Religion 144. One course. *Lincoln*

145, 146. Afro-American History. C-L: History 145, 146. Two courses. *Gavins*

173, 174. Afro-American Literature. C-L: English 167, 168. Two courses. *K. Williams*

213S. Economics of Slavery in the American South. Prerequisites: Economics 149 and consent of instructor. See C-L: Economics 213S. One course. *Coats*

265. Religions of the West Africa Diaspora. See C-L: Religion 265; also C-L: Comparative Area Studies. One course. *Lincoln*

THE MAJOR

Eight courses are required for the major. The course of study for each student is planned by the student and the student's adviser in the light of the student's interests and goals.

Anthropology (AN)

Professor Fox, *Chairman*; Associate Professor Glander, *Director of Undergraduate Studies*; Professors Cartmill, Friedl, O'Barr, and Simons; Associate Professors Apte, Hylander, Quinn, and Smith; Assistant Professors Domínguez, Trouillot, Weller, and Zagarell; Professor Emeritus La Barre; Adjunct Associate Professors Kay (anatomy) and Stack (public policy studies)

Students without prerequisites for a course may ask the instructor for admission.

49S. Freshman Innovative Seminar. One course. *Staff*

93. Human Origins. Origins and distribution; primate evolution; a survey of human paleontology and human biology, prehistory, and language; and the origins of human social organization and culture. One course. *Staff*

94. Introduction to Cultural Anthropology. The dynamics of culture and society; form and function of social institutions. Emphasis upon primitive and complex societies. C-L: Comparative Area Studies. One course. *Staff*

94S. Introduction to Cultural Anthropology. See Anthropology 94. C-L: Comparative Area Studies. One course. *Staff*

101,102. Introduction to the Civilizations of Southern Asia. C-L: Comparative Area Studies, History 193, 194, Interdisciplinary Course 101, 102, and Religion 160, 161. Two courses. *Lawrence and staff*

105. History of Anthropology. Introduction to the origins and development of anthropology as a professional discipline in the Western world, with emphasis on cultural anthropology. Cultural milieu in America, Britain, and France and its effects on the subsequent professionalization and institutionalization of the discipline. One course. *Fox*

107. Introduction to Linguistics. Origin and nature of language; methods of descriptive linguistics with reference to historical and comparative linguistics. Prerequisite: sophomore standing. C-L: English 111, Interdisciplinary Course 111, and Linguistics. One course. *Staff*

109. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy. C-L: Comparative Area Studies, History 109, Interdisciplinary Course 109, Political Science 160, Religion 156, and Sociology 175. One course. *Staff*

110. Advertising and Society. History and development of commercial advertising; advertising as a reflector and/or creator of social and cultural values; advertisements as cultural myths; effects on children, women, and ethnic minorities; advertising and language; relation to political and economic structure; advertising and world culture. Primary emphasis on American society with consideration of selected other cultures. One course. *O'Barr*

112. Current Topics in Linguistics. Advanced study of an area of linguistics or grammar. C-L: English 119, Interdisciplinary Course 119, and Linguistics. One course. *Staff*

115. Gender: A Cross-Cultural Perspective. Examination of social, economic, cultural, and biological bases for variation in sex division of labor, men's and women's power and autonomy, and gender ideology, in societies ranging from hunters and gatherers to contemporary industrial states. C-L: Comparative Area Studies and Women's Studies. One course. *Quinn, Smith, or Trouillot*

116. Language, Ethnicity, and New Nations. Examination of problems facing newly independent countries of Asia and Africa in developing national integration from the theoretical perspectives of sociolinguistics and anthropology. Prerequisite: Anthropology 94. C-L: Comparative Area Studies and Linguistics. One course. *Apte*

118S. The Language of Advertising. Topics include: history and development of the genre of advertising language; comparisons to the specialized language used in medical, legal, and other professional contexts; and relation of topics to sociolinguistic theories and anthropological field methods. Primary focus on American television, print, and radio advertising and consideration of advertising language in certain other cultures. Directed field projects. Prerequisite: Anthropology 110 or consent of instructor. C-L: Linguistics. One course. *O'Barr*

119. Language, Culture, and Society. Analysis of language behavior within and across societies relating variations in linguistic usage to sociocultural factors: ethnosemantics, social dialects, and ethnography of speech. Prerequisite: Anthropology 94. C-L: Comparative Area Studies and Linguistics. One course. *Apte or Weller*

120. South Asia: Institutions and Change. Indigenous cultures and societies of India, Pakistan, Sri Lanka, Bangladesh, Nepal, and Bhutan with emphasis on social institutions, behavioral patterns, value systems, and sociocultural change. Prerequisite: Anthropology 94. C-L: Comparative Area Studies. One course. *Apte or Fox*

121. China: Tradition and Transformation. Culture and social life in late imperial China; continuation and transformation in the twentieth century. Topics include religion, kinship and family, the position of women, imperialism, economic change in Taiwan, and the revolution. C-L: Comparative Area Studies. One course. *Weller*

123. Societies of Mediterranean Europe. Social institutions, cultural patterns, and social change. C-L: Comparative Area Studies. One course. *Friedl*

124S. The American Indian. The Indians of North and South America; origins and prehistory, archeology, racial affiliations, languages, material culture, social and political organization, economics, and religion. C-L: Comparative Areas Studies. One course. *Staff*

125. Strategies of Comparative Analysis. See C-L: Interdisciplinary Course 125; also C-L: Comparative Area Studies, History 137, Political Science 125, and Sociology 125. One course. *Staff*

126. Middle East: Wars, Revolutions, and Social Change. Political and institutional consequences of different forms of social relations. Topics include male-female relations, tribalism, traditional and experimental forms of family organization, ethnic and national identities and conflicts, and the impact of colonialism and the modern world system on the region. C-L: Comparative Area Studies. One course. *Domínguez*

127. Social Transformations in Central America. Current issues affecting the peoples of Central America in historical and anthropological perspective; analysis of revolution through the development of distinctive social structures and cultural forms. C-L: Comparative Area Studies. One course. *Smith*

128. Caribbean Societies and Cultures. Social, economic, and political development within the world system; social differentiation, cultural fragmentation, colonialism, and dependence; the effects of slavery; and the Caribbean diaspora. C-L: Comparative Area Studies. One course. *Domínguez or Trouillot*

129. The Black Experience in the Americas: Roots and Directions. The shared experience of plantation slavery and "blackness"; national and regional differences. C-L: Comparative Area Studies. One course. *Trouillot*

130. Social and Cultural Change. Contemporary theories of change, including innovation, acculturation, and modernization. Prerequisite: Anthropology 94. C-L: Comparative Area Studies. One course. *O'Barr or Smith*

131. Socialism and Society in China. The People's Republic of China since 1949: socialist economic development, political life, population control, local community organization, the arts, and dissidence. C-L: Comparative Area Studies and Women's Studies. One course. *Weller*

132. Human Evolution. Evolutionary biology of the primates. Anatomical and behavioral adaptations and phylogeny of fossils and living primates including *Homo sapiens*. Prerequisite: Anthropology 93 or equivalent. One course. *Cartmill, Glander, or Simons*

133. The Effects of Colonialism and Neocolonialism on Native Peoples. The effect of governmental policies and interests, dominant populations, and local and international economic concerns on indigenous peoples, whether living as enclaves in nation states or as dependencies. C-L: Comparative Area Studies. One course. *Fox or Smith*

134. Political Anthropology. Comparative study of politics and government in tribal and peasant societies. Evolution of political systems. Political changes resulting from contact and colonialism. Prerequisite: Anthropology 94. C-L: Comparative Area Studies. One course. *Domínguez, O'Barr, or Smith*

135. American Culture: Research and Analysis. The shared understandings of American culture, and how they are learned and organized, in domains such as kinship, marriage and family, child rearing, work, economic behavior, ethnicity, person-

ality and character, gender, health and illness, and social interaction. One course. *Domínguez, Quinn, or Stack*

136S. Cross-Cultural Studies of Socialization. Effects of socialization on behavior. Child-rearing theory and practice in different cultures. Cross-cultural findings and child development theory. C-L: Comparative Area Studies. One course. *Quinn*

137. Incest, Adultery, and Other Problems in Kinship and Marriage. Cross-cultural attitudes on human sexuality. Varieties of family life and its integration in the political and economic context of human societies. Prerequisite: Anthropology 94. C-L: Women's Studies. One course. *Domínguez or Quinn*

139. Marxism and Society. A critical appraisal of Marxism as a scholarly methodology for understanding human societies. The basic concepts of historical materialism, as they have evolved and developed in historical contexts. Topics include sexual and social inequality, alienation, class formation, imperialism, and revolution. Core course for the program in Perspectives on Marxism and Society. C-L: Education 139, History 186, Interdisciplinary Course 139, and Sociology 139. One course. *Fox or Wilson*

140. The Anthropology of Race. Human biological variation and the historical development of the race concept in physical anthropology; folk concepts of race and the political-economic causes of racism. C-L: Comparative Area Studies. One course. *Fox*

141. The Self and Others: Ethnic, Racial, and Social Classifications. The nature of human social identities, the contexts in which they are shaped, and the processes by which they change; emphasis on ethnic, racial, and gender identities. One course. *Domínguez*

143. Primate Biology. A comprehensive survey of primate feeding strategies and general ecology. One course. *Glander or Simons*

144. Evolutionary Study of Behavior. Phylogenetic comparison of communication, infant socialization, aggression, and sexual behavior as they pertain to species group structure. Emphasis on primates. One course. *Glander or Simons*

145. Medical Anthropology. Evolution and disease, theories of disease and healing; and factors influencing behavior in health and illness. One course. *Weller*

147, 148. Introduction to Islamic Civilization. Prerequisite: consent of Director of Undergraduate Studies. See C-L: Interdisciplinary Course 162, 163; also C-L: Comparative Area Studies; History 101G, 102G; and Religion 162, 163. Two courses. *Lawrence and staff*

151. Culture and Thought. The role of culture in the organization of knowledge for the performance of everyday cognitive tasks and of thematic knowledge for the broader purposes of living, such as understanding oneself and others' behavior and pursuing one's life goals. One course. *Domínguez or Quinn*

152S. Food in Cross-Cultural Perspectives. The behavioral, institutional, linguistic, religious, and ideological aspects in relation to the production, distribution, and consumption of food within and across cultures. One course. *Apte*

155. Anthropological Approaches to Religion. Cross-cultural perspectives on the relationship of religion to experience, behavior, conflict, and change. C-L: Comparative Area Studies. One course. *Weller*

156. The Politics of Ritual Performance. Current theories of ritual performance; its relation to and effect on intra- and intergroup politics. One course. *Staff*

158S. Cross-Cultural Studies of Humor. Sociocultural basis, nature, scope, and function of humor. Prerequisite: Anthropology 94. One course. *Apte*

159. Language and the International Order. Economic mechanisms that affect language distribution; formation of the world-system and the spread of European languages; colonialism and neocolonialism; Creolization and bilingualism; technological advances and linguistic domination. One course. *Trouillot*

160S. Anthropology and Literature. The interrelationships of literature, both oral and written, and social structure and cultural patterns. Special emphasis on oral literature. One course. *Apte*

163. Foundations of Chinese Civilization. The contemporary experience in China and its relation to ethnic, spiritual, social, aesthetic, moral, political, and economic themes in China's past. (Taught in China.) C-L: Comparative Area Studies and History 163. One course. *R. Davis, Dirlik, Kunst, or Weller*

165. Psychological Anthropology. Anthropological contributions to sociobiology, socialization theory, social psychology, and cognitive science in the effort to understand human nature. One course. *Quinn*

166. Introduction to Archaeology: Humans and Culture. Modern methodology and analysis, theories of cultural evolution, survey of world prehistory with an exploration of the uses of ethnographic analogy. One course. *Zagarell*

167. Prehistoric Technology. Procurement of raw materials, manufacturing of objects, and the usage of these objects in archaeological context. One course. *Zagarell*

168. Beginnings of Civilization. Cultural developments from the beginning of agriculture to the rise of civilization in Africa, Mesoamerica, Peru, India, Southwest Asia, and China, using archaeological and ethnographic examples. C-L: Comparative Area Studies. One course. *Zagarell*

173S. Revolutions in Latin America. Social, economic, political, and ideological circumstances that generate revolutions in twentieth-century Latin America. Prerequisite: consent of instructor. C-L: Comparative Area Studies. One course. *Smith*

180. Current Issues in Anthropology. Selected topics in methodology, theory, or area. One course. *Staff*

189. The Americas: a Survey of the Forces Shaping the Hemisphere. See C-L: History 189; also C-L: Comparative Area Studies, Interdisciplinary Course 189, Political Science 110, and Sociology 189. One course. *Bergquist*

193. Independent Study. Directed reading and research. Open only to qualified seniors, with consent of Director of Undergraduate Studies. One course. *Staff*

195S, 196S. Senior Seminar. Prerequisites: Anthropology 94 and any 100-level course in anthropology, as well as consent of Director of Undergraduate Studies. Two courses. *Staff*

For Seniors and Graduates

201S. Marxism and Anthropology. The interaction of Marxist and anthropological theory over the last half century; particular attention to evolution, historical transformation, mode of production, labor processes, culture, ideology, and consciousness. One course. *Smith*

204S. The Anthropology of Cities. Organization and behavior in urban centers from an evolutionary perspective; cross-cultural analysis of cities. Prerequisite: Anthropology 94. C-L: Canadian Studies and Comparative Area Studies. One course. *Fox or Smith*

206S. Current Theoretical Schools in Anthropology. The theoretical schools since World War II, including cultural materialism and neo-Marxism, structuralism,

cognitive anthropology, cultural analysis and symbolic anthropology, transactional analysis, and sociobiology. Prerequisite: Anthropology 94 or graduate standing or permission of instructor. One course. *Apte, Domínguez, Fox, O'Barr, Quinn, Smith, Trouillot, or Weller*

211S. Ethnography of Communication. History of the mutual influence of linguistics and anthropology leading to the development of ethnography of speaking, ethnoscience, structuralism, and sociolinguistics. Topics vary each semester. Prerequisite: Anthropology 107 or 119. C-L: Linguistics. One course. *Apte, Domínguez, Fox, O'Barr, Quinn, Smith, Trouillot, or Weller*

215S. The Anthropology of Women: Theoretical Issues. Topic to be selected each semester from: gender ideology, women and work, gender inequality, the history of feminist anthropology, or others. C-L: Comparative Area Studies and Women's Studies. One course. *Domínguez, Quinn, Smith, or Trouillot*

228S. Slavery and Society. Western and non-Western systems of slavery and their effects on social organization, self-concepts, and race relations. C-L: Comparative Area Studies. One course. *Domínguez*

234S. Political Economy of Development: Theories of Change in the Third World. See C-L: Political Science 234S; also C-L: Comparative Area Studies, History 234S, Interdisciplinary Course 234S, and Sociology 234S. One course. *Bergquist, Fox, Gereffi, Smith, Trouillot, or Valenzuela*

239. Culture and Ideology. Major theories about the relation between ideologies and social/economic systems. Readings from the works of Marx, Weber, Gramsci, Althusser, Geertz, and others. C-L: Comparative Area Studies. One course. *Trouillot or Weller*

241. The Rise of Civilization in Mesopotamia and Iran. An introductory survey of the major stages of development from the beginnings of agriculture to the collapse of the early state-system (10,000-1,800 B.C.E.). Archaeological and textual evidence, focusing on the rise of the Mesopotamian state-system, the nature of that system, and the mechanisms leading to its collapse. C-L: Comparative Area Studies. One course. *Zagarell*

243S. Theory and Method in Archaeology. Techniques of geochronology, environmental reconstruction, sociocultural reconstruction, and statistical analyses applied to problem areas in archaeology. Prerequisite: Anthropology 166. One course. *Zagarell*

244S. Primate Behavior. Social behavior of prosimians, monkeys, and apes and the evolutionary development of primates. One course. *Glander*

246S. The Primate Fossil Record. Evolution of humans and other primates as inferred from fossil remains. Prerequisite: a course in human evolution. C-L: Anatomy 246S. One course. *Simons*

258S. Symbols in Society. Symbolic action and expressive culture among tribal, peasant, and industrial societies. Approaches emphasized are functionalism, symbolic interaction, structuralism, and cultural interpretation. One course. *Domínguez or Weller*

267. Cognitive Anthropology. The organization of culturally shared knowledge; cognitive tasks such as categorizing, decision making, problem solving, and reasoning. One course. *Quinn*

272S. Marxism and Feminism. Introduction to the theoretical literature and debates linking Marxism and feminism. Prerequisite: consent of instructor. C-L: Women's Studies. One course. *Smith*

280S, 281S. Seminar in Selected Topics. Special topics in methodology, theory, or area. Prerequisite: consent of instructor. Two courses. *Staff*

282S. Canada. See C-L: Interdisciplinary Course 282S; also C-L: Canadian Studies, Comparative Area Studies, History 282S, Political Science 282S, and Sociology 282S. One course. *Leach*

COURSES CURRENTLY UNSCHEDULED

99. Perspectives in Archaeology

122. Modern Africa

164. Peasantry and Peasant Movements

170. Economic Anthropology

205. The Anthropology of Anthropology

237S. Interpretations of Kinship

275S. Inequality in Precapitalist Societies

ANTHROPOLOGY COURSES BY FIELDS OF CONCENTRATION

Anthropology courses for undergraduates are offered in three fields, as noted below. Students majoring in anthropology are expected by the time of their graduation to have completed a concentration in one of the three fields.

Social-Cultural Anthropology. Core courses: Anthropology 105, 119, 134, 137, 155, 165, 170. Courses on major world areas: Anthropology 120, 121, 122, 123, 124, 126, 127, 128, 131, 163. More specialized courses: Anthropology 49S, 107, 109, 115, 116, 118, 119, 129, 130, 133, 135, 136, 140, 141, 145, 147, 148, 151, 156, 158, 160, 164, 173S, 180, 195, 196, 201, 204, 205, 206, 211, 215, 228, 234, 237, 239, 258, 267, 272S, 275, 280, 281, 282.

Physical Anthropology. Anthropology 132, 143, 144, 244, 246.

Archaeology. Anthropology 166, 167, 168, 241, 243.

THE MAJOR

The major in anthropology is offered under the Bachelor of Arts degree.

Major Requirements. Eight courses in the department, two of which must be 93 and 94. Concentration in one of the three fields of the discipline must be accomplished by completing at least three courses designated for the chosen field. The remaining three courses may be selected from other departmental offerings, either in the field of concentration or in other fields. Courses in each field of concentration are listed above, and the concentration requirements for each field follow:

Social-Cultural Anthropology Concentration. At least three courses distributed as follows: at least two courses from the core courses in social-cultural anthropology and at least one course from the list of courses dealing with the cultures and societies of a major world area.

Physical Anthropology Concentration. At least three courses selected from the offerings in physical anthropology, one of which must be 132.

Archaeology Concentration. At least three courses selected from the departmental offerings in archaeology, one of which must be 166.

Recommended Courses in Anthropology beyond Basic Requirements. Although an anthropology major consists of only eight required courses, students are encouraged to take additional courses both within their concentration and elsewhere in the department. The breadth of the discipline makes this desirable.

Suggested Work in Related Disciplines. Related courses in other departments are strongly advised. Each student's adviser will recommend a program of related work to complement the student's concentration and interests in anthropology.

Honors. Qualified majors are encouraged to participate in special work leading to graduation with distinction in anthropology. See the section on honors in this bulletin for general requirements. Any major with a *B+* average (3.3 gpa) in anthropology courses and with a *B* average (3.0 gpa) in all courses is eligible. Students who desire to undertake honors work should request a member of the anthropology faculty to recommend their names to the Director of Undergraduate Studies. To receive departmental honors a major must complete a paper involving significant independent research or scholarship and pass an oral examination on the paper conducted by an appointed committee of faculty members, at least two of whom should be in anthropology. Normally, students will prepare their papers over the course of the senior year working in close collaboration with their committees and receiving on the average two course credits in independent study for the work.

Arabic

For courses in Arabic, see Asian and African Languages.

Art and Art History (ART)

Associate Professor Goffen, *Chairman*; Professor Spencer, *Director of Undergraduate Studies*; Associate Professors Pratt and Pressly; Assistant Professors Bruzelius, Castriota, Epstein, Higdon, Melion, and Sund; Professors Emeriti Hall, Jenkins, Markman, and Sunderland; Adjunct Professor Lee; Artist-in-Residence Shatzman; Part-time Instructor Smith

HISTORY OF ART

Art history is intellectual history, providing students from all academic disciplines the opportunity to strengthen their powers of perception and expression and to bring together their various interests and different kinds of learning experiences. Art history is the study of works of art in their historical context, that is, in the context of their cultural, religious, philosophical, and sociological conceptions. Studying art history develops the ability to evaluate and organize different kinds of information and it enhances the faculties of creative imagination, precise observation, clear expression, and critical judgment. Students of art history acquire an appreciative awareness of the great aesthetic achievements of mankind and a sense of our cultural heritage.

A major or second major in art history is the appropriate training for students interested in teaching or scholarship in the history of art, in working in galleries or museums, or in art publishing. Art history is also an excellent preparation for those planning careers in medicine, law, or other professions.

69, 70. Introduction to the History of Art. The history of western architecture, sculpture, and painting in a cultural context. 69: from prehistory to the Renaissance (c. 1400). 70: from the Renaissance to the present. One course. *Staff*

120. The Art of Egypt and the Ancient Near East. Art and architecture of the major urban centers of Egypt, Syria-Palestine, Mesopotamia, and Iran from the fourth millennium B.C. to the conquest of Alexander. Emphasis on architecture, sculpture, and painting. C-L: Comparative Area Studies. One course. *Castriota*

122. Art and Myth in Ancient Greece. Art in relation to myth in Greek society from the Orientalizing to the Hellenistic period. Emphasis on architectural sculpture and painting; connections between monumental and small-scale arts. One course. *Castriota*

125. Ancient Art. An introduction to the architecture, sculpture, and painting of ancient Greece and Rome from the Mycenaean period through the sixth century A.D. One course. *Castriota or Melion*

127. Early Christian Culture: Evidence of Art and Literature. A consideration of major social and political developments from the third to fifth centuries in the Mediterranean basin through the detailed analysis of contemporary monuments and texts. C-L: Religion 127. One course. *Epstein and Gregg*

129. The Age of Justinian. Sixth-century monuments—Hagia Sophia, the mosaics of Ravenna, the icons of Sinai—as the culmination of Late Antique classical culture and the initiation of the Christian Middle Ages; the social and historical context as seen in the writings of Procopius, Paul the Silentiary, and Romanus the Melode. C-L: Medieval and Renaissance Studies. One course. *Epstein*

131. Byzantine Art and Architecture. Stylistic and structural developments in architecture, mosaics, frescoes, and icons in Byzantium from iconoclasm to the fall of Constantinople (ninth to fifteenth century), considered with their cultural context. One course. *Epstein*

132. Romanesque Art. Western European art and architecture from the mid-tenth through the twelfth centuries. Influence of monasticism, the Crusades, and pilgrimages on the arts. C-L: Medieval and Renaissance Studies. One course. *Bruzelius*

133. Gothic Art. Western European art and architecture of the High Middle Ages to the early fifteenth century. Emphasis on the French contribution to the development of Gothic style. C-L: Medieval and Renaissance Studies. One course. *Bruzelius*

134. Medieval Architecture. The development of medieval architecture through the mid-fourteenth century. Emphasis on churches, with some discussion of castles and fortifications, town planning, and domestic architecture. C-L: Medieval and Renaissance Studies. One course. *Bruzelius*

135. Gothic Cathedrals. Major monuments of Gothic architecture in the twelfth and thirteenth centuries on the continent and in England with concentration on the great cathedrals of France. C-L: Medieval and Renaissance Studies. One course. *Bruzelius*

136. Gothic Cathedrals. Same as Art 135, but taught in French. C-L: Medieval and Renaissance Studies. One course. *Bruzelius*

137. The Twelfth Century. The climax of Romanesque style and the emergence of the Gothic in western European art and architecture from A.D. 1100 to 1200. Emphasis on the transformation of medieval art and society through the growth of urban life and the rise of monarchy. C-L: Medieval and Renaissance Studies. One course. *Staff*

140. Giotto and the Origins of the Renaissance. Painting and sculpture in Italy, with emphasis on Pisano, Duccio, Giotto, and the crisis of the Black Death. C-L: Medieval and Renaissance Studies. One course. *Goffen*

141. Fifteenth-Century Italian Art. Painting, sculpture, and architecture from Masaccio, Donatello, and Brunelleschi to Leonardo. Emphasis on the art of Florence. C-L: Medieval and Renaissance Studies. One course. *Goffen or Spencer*

142. Sixteenth-Century Italian Art. Painting and sculpture in Rome and Florence: Michelangelo, Raphael, Leonardo. The rise and diffusion of mannerism: Pontormo to Tintoretto. C-L: Medieval and Renaissance Studies. One course. *Goffen or Spencer*

147. Venetian Art: Fifteenth Century to the Eighteenth Century. Painting, sculpture, and architecture. Emphasis on Bellini, Giorgione, and Titian; the primacy of color; and the major themes of Venetian art: religion, politics, and sensuality. C-L: Medieval and Renaissance Studies. One course. *Goffen*

148. Art of the Netherlands in the Fifteenth Century. Early Netherlandish painting with an emphasis on the innovations of the Master of Flémalle, Jan van Eyck, Rogier van der Weyden, and Hugo van der Goes; courtly and civic patronage of the visual arts in the cities of Flanders and Brabant; the cult of oil-based pigments and paintings as a mirror of nature. C-L: Medieval and Renaissance Studies. One course. *Melion*

150. Prints in the Fifteenth, Sixteenth, and Seventeenth Centuries. The formats and functions of prints in Italy, Germany, and the Netherlands. Status of a replicative medium, notions of technical virtuosity, the conceit of a deceiving likeness, emblems, and the structure of title pages. Emphasis on Marcantonio Raimondi, Dürer, Goltzius, the Rubens workshop, and Rembrandt. C-L: Medieval and Renaissance Studies. One course. *Melion*

151. Art of Italy in the Seventeenth Century. Caravaggio, the Carracci, Guido Reni, Domenichino, Bernini, and Poussin. Modes of description and narration; the concern with the status of pictorial representation; and the attempts to define and retrieve the canonical achievements of the early sixteenth century. One course. *Melion*

152. Art of the Netherlands in the Sixteenth Century. Introduction of new pictorial formats and functions in Netherlandish prints and paintings at the turn of the sixteenth century; Floris, Bruegel, and the definition of native idioms in the circle of Abraham Ortelius in Antwerp; the Haarlem community of engravers and theoreticians and the formulation of a history of Northern art at the close of the sixteenth century. C-L: Medieval and Renaissance Studies. One course. *Melion*

153. Art of the Netherlands in the Seventeenth Century. The descriptive subject categories and the alternative modes of representation formulated by Rubens, Rembrandt, and Vermeer. One course. *Melion*

154. Art of Germany in the Fifteenth and Sixteenth Centuries. Schongauer, Dürer, Baldung, and Altdorfer as printers and painters; patronage of the visual arts under the Emperor Maximilian; modes of linear virtuosity and the limewood sculpture industry of southern Germany; the reformation of images in the 1520s; attempts to appropriate Italian pictorial canons and define a native Northern tradition. One course. *Melion*

160. Rococo to Neoclassicism: Eighteenth-Century European Art. Major developments in painting, sculpture, architecture, and the landscape garden in eighteenth-century France, Italy, England, and Germany. Among the artists considered are Watteau, Hogarth, Chardin, Fragonard, Tiepolo, Piranesi, Gainsborough, and David. One course. *Pressly*

161. Nineteenth-Century European Art. Painting and sculpture of leading artists within the movements of neoclassicism, romanticism, impressionism, and symbolism. C-L: Comparative Area Studies. One course. *Pressly or Sund*

162. American Art from Colonial Times to 1900. The development of an American national school in portraiture, history painting, landscape, genre scenes, and still-life. Major figures include Copley, Bingham, Cole, Church, Whistler, and Eakins. One course. *Pressly or Sund*

163. Eighteenth and Nineteenth-century Painting in Britain: Hogarth to the Pre-Raphaelites. A survey of British painting from Hogarth to the Pre-Raphaelites, focusing on the establishment of a strong native school in the genres of history painting, narrative subjects, portraiture, sporting art, and landscape. Included among the more important artists are Hogarth, Reynolds, Gainsborough, Stubbs, Blake, Turner, and Constable. One course. *Pressly*

164. Art of the Romantic Period. Painting, sculpture, and architecture in France, England, Spain, and Germany from the late eighteenth century to the Revolution of 1848. The relationship of art to politics, changing concepts of genius and originality, the cult of styles, orientalism, and the emergence of landscape as a dominant art form. One course. *Pressly*

165. Far Eastern Ceramics. C-L: Comparative Area Studies. One course. *Lee*

178. Pre-Columbian Art and Architecture. A survey of the art and architecture of American cultures in Mexico, Central America, and Peru before the Spanish conquest. Particular emphasis on their political and religious functions, including the Olmec, Teotihuacan, Mayan, Aztec, and Inca civilizations. C-L: Comparative Area Studies. One course. *Sund*

181. The New York School: Art of the 1950s. American art after World War II: abstract expressionism and the New York school. Emphasis on improvisation, gesture, and experimentation in the works of Pollock, de Kooning, Rothko, David Smith, Johns, and Rauschenberg. Historical influences and parallels with the other arts. One course. *Higdon*

183. Twentieth-Century American Art. Art of the twentieth century in the Americas. Emphasis on the development of regional styles and the emergence of the United States in the vanguard of modernism. One course. *Higdon*

184. History of Impressionism. The evolution of the impressionist movement and postimpressionist reactions of the 1880s. Particular attention to the work of Manet, Degas, Monet, Renoir, and Pissarro. C-L: Comparative Area Studies. One course. *Sund*

185. Postimpressionism. The emergence and development of postimpressionist styles—neo-impressionism, synthetism, symbolism—with emphasis on Seurat, Cézanne, Van Gogh, and Gauguin. The impact of postimpressionism on early twentieth-century movements, including fauvism, expressionism, and cubism. One course. *Higdon or Sund*

186. Twentieth-Century Art. Modern art from 1900 to present. Emphasis on major movements, theoretical aims, and actual achievements. One course. *Higdon*

187. Surrealism. The surrealist movement that flourished in Paris between the World Wars: its origins, aims, and major adherents—such as the artists Miró, Magritte, Tanguy, and Dalí—examined in the context of surrealist literature, theory, and politics. One course. *Higdon*

188. Twentieth-Century Criticism. Twentieth-century art through the writings of its major proponents from Apollinaire and Roger Fry through Meyer Schapiro and Clement Greenberg to present-day theorists of postmodernism. The definition of modernism and the role of the critic as advocate, mediator, arbiter, and prophet of contemporary trends. One course. *Higdon*

189. Modern Architecture. Major movements in European and American architecture in the nineteenth and twentieth centuries with concentration on major architects and major buildings. Technical and theoretical bases; social and aesthetic implications. One course. *Epstein*

191, 192. Independent Study. Directed reading and research. Open only to qualified students in the junior year, by consent of Director of Undergraduate Studies. Two courses. *Staff*

For Seniors and Graduates

230S. Medieval and Byzantine Art and Architecture. Conceptual, institutional, or stylistic topics. Subject varies from year to year. Prerequisite: consent of instructor. C-L: Medieval and Renaissance Studies. One course. *Epstein*

232S. Romanesque and Gothic Art and Architecture. Analysis of an individual topic. Subject varies from year to year. Prerequisite: consent of instructor. C-L: Medieval and Renaissance Studies. One course. *Bruzelius*

240. Italian Art. Examination of an individual artist, a particular movement, or the art of an Italian city. Subject varies from year to year. Prerequisite: consent of instructor. C-L: Medieval and Renaissance Studies. One course. *Goffen or Spencer*

242S. Studies in Italian Renaissance Art. Specific problems dealing with iconography, style, or an individual master from c. 1300 to 1600. Subject varies from year to year. Prerequisite: consent of instructor. C-L: Medieval and Renaissance Studies. One course. *Goffen or Spencer*

243S. Studies in Northern Art. Selected topics such as the Antwerp workshops of the sixteenth century, picturing in Haarlem at the turn of the seventeenth century, or Rubens and Rembrandt. Prerequisite: consent of instructor. One course. *Melion*

261S. Studies in Romanticism. Examination of the work of a single artist or the development of a specific theme or movement within the period 1760 to 1850. One course. *Pressly*

262S. Studies in Nineteenth-Century Art. Focus on a major artist, movement, or trend in nineteenth-century art. Prerequisite: consent of instructor. One course. *Pressly or Sund*

276S. Problems in Modern Art. Selected topics in modern art before 1945, with emphasis on major movements of masters. Prerequisite: consent of instructor. One course. *Higdon*

277S. Contemporary Art. Historical and critical principles applied to present-day artists and/or movements in all media since World War II. Prerequisite: consent of instructor. One course. *Higdon*

291, 292. Independent Study. Directed reading and research. Open only to qualified students in the senior year, by consent of Director of Undergraduate Studies. Two courses. *Staff*

293S. Methods of Art History. Approaches to the study of works of art, including connoisseurship, iconology, and stylistic analysis. Prerequisite: consent of instructor. One course. *Staff*

294, 295. Special Problems in Art History. Individual study and research. Two courses. *Staff*

DESIGN

To cover materials supplied in design courses, a fee of \$40 will be charged for each course, payable prior to the beginning of classes.

53. Drawing. Directed approaches to practice in life drawing and in the expression of graphic concepts. One course. *Shatzman and Smith*

54. Two-Dimensional Design and Color. Experiments in form and color, with work from observation. Introduction to color theory in various media. Prerequisite: Art 53. One course. *Smith*

103, 104. Painting. Studio practice in painting with individual and group criticism and discussion of important historic or contemporary ideas. Prerequisites: Art 54 or equivalent and consent of instructor. Two courses. *Pratt*

105, 106. Advanced Drawing and Color. Work from life or in formal modes, with emphasis on personal development, through individual and group criticism and discussion. Prerequisites: Art 53 and 54 and consent of instructor. Two courses. *Pratt*

107. Survey of Printmaking. Survey of general printmaking techniques including printing of intaglio, silkscreen, relief, and monoprints. Prerequisite: Art 53, 54, or consent of instructor. One course. *Shatzman*

108. Printmaking Intaglio. Studio course with directed problems in the intaglio medium including etching, aquatint, drypoint, black and white and color printing methods. Prerequisite: Art 53, 54, 107, or consent of instructor. One course. *Shatzman*

109. Printmaking Silkscreen. Studio course on the silkscreen medium and its stencil-making process including paper, film, glue, tusche, and photographic methods. Prerequisite: Art 53, 54, 107, or consent of instructor. One course. *Shatzman*

180S. Theory of Design. Visual thinking and innovations in historical and contemporary art. Formal analysis and discussion of important issues for students involved in creating art. Prerequisites: two courses in design and consent of instructor. One course. *Pratt*

203, 204. Advanced Painting. Prerequisites: Art 53 and 54 and consent of instructor. Two courses. *Pratt*

207. Advanced Printmaking. Studio course on advanced methods of color printing in the relief, intaglio, silkscreen, and monotype areas. Traditional and more experimental methods and the combinations of the included media. Prerequisite: Art 108, 109, or consent of instructor. One course. *Shatzman*

208. Printmaking: Papermaking. Studio course on handmade sheets for watercolor, printmaking, and drawing. Projects in combination with other studio areas. Prerequisite: Art 53, 103, 108, or consent of instructor. One course. *Shatzman*

217, 218. Individual Project. Independent work open to highly qualified seniors on recommendation of instructor and invitation of department. Two courses. *Staff*

See also Institute of the Arts in this bulletin.

COURSES CURRENTLY UNSCHEDULED

56. Three-Dimensional Design

101, 102. Photography

109. Figurative Sculpture

110. Sculpture

143. Classical Tradition in the Renaissance

144. Central Italian Art

149. Death in Art

209, 210. Advanced Sculpture

220S. Greek Painting

279S. Problems in Modern Architecture

THE MAJOR

The student will elect a sequence of courses emphasizing either the history of art or design. The department offers work leading to graduation with distinction. See the section on honors in this bulletin.

History of Art

Major Requirements. Eight courses in the history of art to include: one course from each of the following areas—ancient, medieval, Renaissance/baroque, and modern; two seminars at the 200 level. For students planning to do graduate work in art history, one of these should be Art 293S. Two years of college level study or the equivalent in French, German, or Italian are strongly recommended. Majors contemplating graduate work in history of art are advised to take more than eight courses in history of art and to gain competence in French and German.

Design

Prerequisites. Art 69 or 70 and one other art history course; Art 53 and 54.

Major Requirements. Five studio courses exclusive of Art 53 and 54.

Asian and African Languages

Major programs are not offered in Asian and African languages. Interested students are encouraged, however, to consider the major in comparative area studies.

ARABIC (ARB)

1, 2. Elementary Arabic. Understanding, speaking, reading, and writing Arabic. Language laboratory. Two courses. *Cooke*

11. Intensive Elementary Arabic I. Instruction for a period of two weeks. Eligibility for Arabic 12, 13, or 14 requires study independently throughout the year following completion of Arabic 11. No prerequisites. Pass/fail. Half course. *Cooke*

12. Intensive Elementary Arabic II. Instruction for a period of two weeks. Eligibility for Arabic 13 or 14 requires study independently throughout the year following completion of Arabic 12. Prerequisite: consent of instructor. Pass/fail. Half course. *Cooke*

13. Intensive Elementary Arabic III. Instruction for a period of two weeks. Eligibility for Arabic 14 requires study independently throughout the year following completion of Arabic 13. Prerequisite: consent of instructor. Pass/fail. Half course. *Cooke*

14. Intensive Elementary Arabic IV. Instruction for a period of two weeks. Prerequisite: consent of instructor. Pass/fail. Half course. *Cooke*

63, 64. Intermediate Arabic. Reading, composition, and conversation in Classical Arabic. Readings include selections from the Qur'ān, contemporary literature, and the Arabic press. Two courses. *Cooke*

100. Music and Literature in North African Culture. The role of musicians and classical, popular, and religious music in the Islamic world, with reference to North Africa. Twentieth-century literature of North Africa with emphasis on women. C-L: Comparative Area Studies. One course. *Cooke and Silver*

173S. Women in Arabic Literature. Taught in English. Representative novels, short stories, plays, and poems by writers (mostly female) in the Arab world. C-L: Comparative Area Studies and Women's Studies. One course. *Cooke*

191, 192. Independent Study. Two courses. *Cooke*

Courses Currently Unscheduled

171S. Modern Arabic Literature in Translation

CHINESE (CHN)

1, 2. Elementary Chinese. Introduction to speaking, understanding, reading, and writing modern standard Chinese (Mandarin, or *putonghua*, based on the Beijing dialect). One and one-half courses each. *Wang and staff*

63, 64. Intermediate Chinese. Reading, oral practice, language laboratory. One and one-half courses each. *Kunst and staff*

125, 126. Advanced Chinese. Reading and discussion of selections from modern literature and nonfiction. Prerequisite: Chinese 63, 64, or equivalent. Two courses. *Kunst*

135, 136. Introduction to Modern Chinese Literature. Prerequisite: Chinese 64 or equivalent. C-L: Comparative Area Studies. Two courses. *Kunst*

141S. Chinese Literature in Translation. Masterpieces of traditional and modern Chinese poetry, fiction, and drama. C-L: Comparative Area Studies. One course. *Wang*

142. Classical Chinese Nature Poetry in Translation. Introduction to Chinese landscape poetry from 1100 B.C. to the Tang Dynasty. Comparison with English romanticism, relations between poetry and religion, and influence upon modern Anglo-American poetics. C-L: Comparative Area Studies. One course. *Wang*

171. The Novel in Modern China. Reading and discussion in depth of a selected novel, with its cultural and historical background. Prerequisite: Chinese 136 or equivalent. C-L: Comparative Area Studies. One course. *Kunst*

191, 192. Independent Study. Two courses. *Staff*

Courses Offered in the Duke Study in China Program at Beijing Teachers College and Nanjing University

111, 112. Intensive Progress in Chinese. Two courses. *Staff*

127. Chinese Conversation and Composition. Discussion based on oral and written reports. Aural comprehension practice. One course. *Staff*

129. Advanced Readings in Chinese. Reading and discussion of selections from modern Chinese literature, expository prose, and the Chinese press. One course. *Staff*

193. Directed Study. Reading and research culminating in a paper, on a topic approved and supervised by the resident director. One course. *Staff*

HEBREW (HEB)

1, 2. Elementary Modern Hebrew. Introduction to speaking, understanding, reading, and writing Modern Hebrew. Language laboratory. Two courses. *Staff*

63, 64. Intermediate Modern Hebrew. Reading, composition, conversation, and language laboratory. Prerequisite: Hebrew 1, 2 or equivalent. Two courses. *Staff*

191, 192, 193, 194. Independent Study. Four courses. *Staff*

HINDI-URDU (HIN)

1, 2. Intensive Elementary Hindi-Urdu. Conversation, basic grammar, and vocabulary; introduction to the Devanagari script and the reading of graded texts. Four hours of classroom work; two hours of language laboratory drill. Two courses. *Silver*

63, 64. Intensive Intermediate Hindi-Urdu. Reading, composition, and conversation. Four hours of classroom work, two hours of language drill. Prerequisite: Hindi-Urdu 1, 2. Two courses. *Silver*

191, 192. Independent Study. Directed reading and research. Open only to students with prior knowledge of Hindi-Urdu. Two courses. *Silver*

JAPANESE (JPN)

1, 2. Elementary Japanese. Introduction to speaking, understanding, reading, and writing. Two courses. *Nagai*

63, 64. Intermediate Japanese. Practice on advanced spoken and written patterns; reading and discussion. Two courses. *Fowler or Nagai*

155, 156. Readings in Modern Japanese. C-L: Comparative Area Studies. Two courses. *Fowler*

161. Modern Japanese Fiction in Translation. An examination of the major forms of long and short fiction from 1890 to the present and the tradition from which they arose. C-L: Comparative Area Studies. One course. *Fowler*

191, 192. Independent Study. Two courses. *Fowler or Nagai*

PERSIAN (PER)

1, 2. Elementary Persian. Introduction to spoken and literary Persian: understanding, speaking, reading, and writing. Language laboratory drill. Two courses. *Lawrence*

63, 64. Intensive Intermediate Persian. Four hours of classroom work; two hours of language laboratory drill. Advanced conversation in Iranian Persian, reading, and composition. Prerequisite: elementary Persian. Two courses. *Lawrence*

SWAHILI (SWA)

1, 2. Elementary Swahili. Language instruction through self-instructional mode. Intensive work in language laboratory; drill sessions with native speakers. Emphasis on conversation. Two courses. *W. O'Barr*

14. Intensive Swahili. Accelerated introduction to Swahili, combining in one semester the work of Swahili 1 and 2. Normally offered only in the summer. Two courses. *W. O'Barr*

63, 64. Intermediate Swahili. Classroom work and language laboratory drill. An advanced study of language and Swahili culture and literature. Two courses. *W. O'Barr*

191, 192. Independent Study. Two courses. *W. O'Barr*

Astronomy

For courses in astronomy, see Physics.

Biology (BIO)

The introductory biology courses and the biology major are cooperatively administered by the Department of Botany and the Department of Zoology. Additional

courses in biosciences are offered by the Departments of Botany and Zoology, and also by the Departments of Anthropology, Chemistry, and Psychology in Trinity College of Arts and Sciences; by the Departments of Anatomy, Biochemistry, Microbiology and Immunology, Pathology, and Physiology in the School of Medicine; and by the Schools of Engineering and Forestry and Environmental Studies.

10L. Marine Biology. Physical and chemical characteristics of marine ecosystems and the functional adaptations of marine organisms to these systems. Lectures, field trips, and laboratories. For students not majoring in a natural science. Given at Beaufort. C-L: Marine Sciences. One course. *Staff*

14L. Principles of Biology. A one-semester introduction. Lectures and laboratories. One course. *Staff*

Biology 14L is a prerequisite to most courses in botany and zoology. Both Biology 10L and Biology 14L may count for the distributional requirements and for the requirement in empirical science.

THE MAJOR

The Bachelor of Arts and the Bachelor of Science degrees are offered with a major in biology, in botany, in zoology, or in an individually designed interdepartmental concentration approved by the appropriate Director of Undergraduate Studies. The Director of Undergraduate Studies for the biology major is alternately the Director of Undergraduate Studies in botany or zoology.

The Handbook for Biology Majors may be obtained from the office of the Director of Undergraduate Studies for the biology major. For descriptions of courses appropriate for the biology major see courses listed in this bulletin under the Departments of Botany and Zoology and related departments.

For the A.B. Degree

This degree program is the general liberal arts major program. Preprofessional students should elect the degree program leading to the B.S. degree.

Prerequisite. Biology 14L or equivalent.

Corequisites. Botany 145L; Zoology 74L; Chemistry 11, 12; and Mathematics 31.

Major Requirements. A minimum of six courses in the biosciences, not including the above prerequisite and corequisites. The six courses must include one course from three of the following four areas in the Departments of Botany or Zoology: cell biology, genetics, plant or animal ecology, plant or animal physiology. The remaining three courses may be elected from among courses numbered 100 or above in botany, zoology, or in the basic science departments in the School of Medicine, or from approved courses of a basic biological character in related departments.

For the B.S. Degree

This is the preprofessional program in biology.

Prerequisite. Biology 14L or equivalent.

Corequisites. Botany 145L; Zoology 74L; Chemistry 11, 12, and 151; Mathematics 31, 32 or 34; Physics 51, 52; Biochemistry 227 or Chemistry 175.

Major Requirements. A minimum of six courses in the biosciences, not including the prerequisite and corequisites, as specified for the A.B. degree, except that at least one of the courses must be at the 200 level. At least one semester of independent study is recommended.

For Departmental Majors and Interdepartmental Concentrations

See major requirements under Botany and Zoology for botany majors and zoology majors, respectively. For an individually designed interdepartmental concentra-

tion (e.g., in cell and molecular biology, physical biology, marine biology) see the Directors of Undergraduate Studies who can help arrange for such programs. See major requirements under Chemistry for a specialization in biological chemistry.

Honors

The botany and zoology departments offer a program for graduation with distinction in biology. See the section on honors in this bulletin. Students interested in pursuing an honors program should consult the Director of Undergraduate Studies for the biology major.

Botany (BOT)

Professor W. Culberson, *Chairman*; Professor Wilbur, *Director of Undergraduate Studies*; Professors Antonovics, Barber, Boynton, Ramus, Searles, Stone, Strain, and White; Associate Professors Christensen, Knoerr, Schlesinger, and Siedow; Assistant Professors Johnston and Mishler; Professors Emeriti Anderson, Billings, Hellmers, Johnson, Kramer, Naylor, and Philpott; Adjunct Professor C. Culberson; Adjunct Assistant Professor Patterson

The introductory course is Principles of Biology. It is listed under Biology in this bulletin.

43. Ecology and Society. Ecological concepts and their application to human society. Intended for students interested primarily in social sciences and humanities. One course. *Staff*

51L. Culture and Propagation of Plants. The principles of plant growth and development, as exemplified in horticulture. One course. *W. Culberson*

53. Introductory Oceanography. Basic principles of physical, chemical, biological, and geological oceanography. C-L: Geology 53. One course. *Pilkey and Searles*

75. Plants of the Southeast. Survey of the flora, stressing biological and geological factors related to present-day floristic and evolutionary patterns. One course. *Christensen or Stone*

90. Plants and Man. The biological nature of crop plants, the world's major economic plants, and the origins and evolution of agriculture. One course. *Staff*

102. Trees and Shrubs of North Carolina. Identification and natural history of the trees, shrubs, and woody vines. Emphasis on those cultivated and occurring naturally in North Carolina. One course. *Wilbur*

103L. General Microbiology. Classical and modern principles of the structure, physiology, and genetics of microorganisms and their roles in human affairs. Prerequisite: one course in a biological science or consent of instructor. One course. *Staff*

114L. Introduction to Biological Oceanography. Laboratory emphasis. Not open to students who have had Geology 53 or Botany 53. Prerequisite: introductory biology. See C-L: Zoology 114L; also C-L: Marine Sciences. Given at Beaufort. One course (spring); one and one-half courses (summer). *Barber, Ramus, and staff*

115L. Phytoplankton. Taxonomy, physiology, and community ecology of these life forms and their role in the biology of the seas. Laboratory and field exercises emphasize techniques of the biological oceanographer. Prerequisite: introductory biology. Given at Beaufort. One course. *Ramus*

142L. Plant Systematics. Surveys major groups. Principles of vascular plant taxonomy with practice in identification of local flora. Lectures, laboratories, and field trips. One course. *Wilbur*

145L. Plant Diversity. Major groups of the living plants, their evolutionary origins and phylogenetic relationships. Prerequisite: introductory biology. C-L: Botany 245L. One course. *Mishler, Searles, or Wilbur*

146L. Ecology of Plants. Principles of the relationships between plants and their environments. Structures and processes of ecosystems. Laboratory, lectures, and field trips. Prerequisites: introductory biology and one other course in biology. C-L: Botany 246L. One course. *Christensen, Schlesinger, or Strain*

151L. Plant Physiology. Principal physiological processes of plants, including respiration, photosynthesis, water relations, and factors associated with plant morphogenesis. Prerequisites: introductory biology and one year of chemistry; organic chemistry is desirable. C-L: Botany 251L. One course. *Siedow*

160L. Plant Anatomy. A comparative study of basic cell types, tissues, and organs of vascular plants. Correlation of anatomical information with pertinent literature, application of anatomy to problems in systematics and evolution, and the interrelationship between structure and function. Prerequisite: plant diversity or consent of instructor. C-L: Botany 260L. One course. *White*

167. Analysis of Marine Ecosystems. Prerequisites: Biology 14L and Chemistry 12. See C-L: Zoology 167; also C-L: Marine Sciences. Given at Beaufort. One course. *Barber*

180. Principles of Genetics. Structure and properties of genes and chromosomes in individual organisms and in populations. Prerequisite: introductory biology. C-L: Botany 280, Genetics—The University Program, Zoology 180, and Zoology 280. One course. *Antonovics, Boynton, and Gillham*

191, 192. Independent Study. Directed reading and research. Open to qualified students in the junior and senior years by consent of department. C-L: Marine Sciences. Credit to be arranged. *Staff*

193T, 194T. Tutorial in Botany. Credit to be arranged. *Staff*

195S.04. Light in the Sea. Properties of light in the sea and the biological consequences; orientation, bioluminescence, biological rhythms, primary production, and sensing devices. Given at Beaufort. Half course. *Ramus*

195S, 196S. Seminar in Botany. Credits to be arranged. *Staff*

For Seniors and Graduates

205. Genetic Engineering. Molecular aspects of gene expression and cell differentiation; application of recombinant DNA techniques to basic and applied problems. Prerequisites: organic chemistry and cell biology or genetics. One course. *Johnston*

210L. Bryology. Morphological, systematic, and ecological characteristics of mosses and liverworts. One course. *Mishler*

212L. Phycology. Morphological and ecological characteristics of common freshwater and marine algae and principles of their classification. One course. *Searles*

215L. Primary Productivity in the Seas. The biological flux of carbon in the coastal and open seas involving phytoplankton, seaweeds, seagrasses, and marshgrasses. The contributions of these primary producers to food chain processes and global atmospheric-sedimentary cycles, as well as the ecological consequences of variations in photosynthetic mechanisms. Prerequisites: introductory biology and introductory chemistry. C-L: Marine Sciences and Zoology 215L. Given at Beaufort. One course. *Barber and Ramus*

218. Barrier Island Ecology. Adaptation of plants to barrier island migration and other physical characteristics of the coastal environment. Major emphasis will be placed on management of barrier beaches from Maine to Texas and the impact of human interference with natural processes. Field studies. Prerequisite: a course in general ecology. C-L: Forestry and Environmental Studies 218 and Marine Sciences. Given at Beaufort. One and one-half courses. *Leatherman (visiting summer faculty)*

221L,S. Mycology. Seminar. Field and laboratory study of vegetative and reproductive structures of the fungi and slime molds. Methods of collection, isolation, propagation, and identification of the major orders as represented in local flora. Prerequisite: one year of biological science. One course. *Staff*

225T, 226T. Special Problems. Students with adequate training may do special work in the fields listed below. Credit to be arranged.

2. Genetics. *Antonovics*
3. Biological Oceanography. *Barber*
4. Genetics. *Boynton*
5. Ecology. *Christensen*
6. Lichenology. *W. Culberson*
8. Molecular Botany. *Johnston*
9. Systematics and Bryology. *Mishler*
10. Phycology. *Ramus*
11. Ecology. *Schlesinger*
12. Phycology. *Searles*
13. Physiology. *Siedow*
14. Systematics of Flowering Plants. *Stone*
15. Ecology. *Strain*
16. Anatomy and Morphology of Vascular Plants. *White*
17. Systematics and Taxonomy of Vascular Plants. *Wilbur*

227. Introductory Biochemistry I: Intermediary Metabolism. Chemistry of the constituents of proteins, lipids, carbohydrates, and nucleic acids and their metabolic interrelationships. Prerequisite: organic chemistry. C-L: Biochemistry 227. One course. *Fridovich and Rajagopalan*

228. Introductory Biochemistry II: Biological Macromolecules. Prerequisite: Biochemistry 227 or equivalent. C-L: Biochemistry 228. One course. *Greenleaf and Webster*

232. Microclimatology. C-L: Forestry and Environmental Studies 232. One course. *Knoerr*

234S. Problems in the Philosophy of Biology. Prerequisite: consent of instructor. See C-L: Philosophy 234S. One course. *Brandon (Philosophy)*

237L. Systematic Biology. Theory and practice of identification, species discovery, phylogeny reconstruction, classification, and nomenclature. Prerequisites: introductory biology and one course in animal or plant diversity. C-L: Zoology 237L. One course. *Lundberg and Mishler*

250L,S. Plant Biosystematics. Descriptive and experimental procedures used to assess systematic implications of vascular plant evolution. Laboratory, discussion, and field-oriented problems. Prerequisites: basic courses in systematics and genetics. One course. *Stone*

253. Biophysical Plant Physiology. Application of physical principles to such processes as ion transport, water relations, and the interconversion of energy in plant cells. Prerequisites: Botany 151L and Mathematics 32 or equivalent. One course. *Siedow*

261. Photosynthesis. Principles of photosynthesis: developmental, mechanistic, regulatory, and ecological aspects of the photosynthetic process. Prerequisite: Botany 151L or 251L. One course. *Siedow*

265L. Physiological Plant Ecology. The physiological approach to interpreting adaptation in plants, with emphasis on terrestrial seed plants. Prerequisites: Botany 146L and 151L or equivalents. One course. *Strain*

266. Plant Population Biology. Theoretical, experimental, and field approaches to plant population dynamics; population growth and regulation; effects of density, competition, and predation. One course. *Antonovics*

267L. Community Ecology. Prerequisites: an introductory ecology course and consent of instructor. See C-L: Zoology 204. One course. *Christensen and H. Wilbur (Zoology)*

268. Molecular Biology II: Nucleic Acids. Structure and metabolism of nucleic acids in the context of their biological function in information transfer. Prerequisites: introductory biochemistry and Biochemistry 259 or consent of instructor. C-L: Biochemistry 268 and Microbiology and Immunology 268. One course. *Modrich and staff*

269. Advanced Cell Biology. Prerequisite: introductory cell biology or consent of instructor. C-L: Anatomy 269, Microbiology and Immunology 269, and Zoology 269. One course. *McClay and staff*

272. Biogeochemistry. Processes controlling the circulation of carbon and biochemical elements in natural ecosystems and at the global level, with emphasis on soil and surficial processes. Prerequisite: Chemistry 12, Botany 146L, or equivalent. C-L: Geology 272. One course. *Schlesinger*

283. Extrachromosomal Inheritance. Genetics, biochemistry, and molecular biology of the organelles of eukaryotic cells, and cellular symbionts. Prerequisite: introductory genetics. C-L: Genetics—The University Program and Zoology 283. One course. *Boynton and Gillham (Zoology)*

285S. Ecological Genetics. Interaction of genetics and ecology and its importance in explaining the evolution, diversity, and distribution of plants and animals. Prerequisites: Botany 180 and 286 or equivalents. C-L: Genetics—The University Program. One course. *Antonovics*

286. Evolutionary Mechanisms. Population ecology and population genetics of plants and animals. Fitness concepts, life history evolution, mating systems, genetic divergence, and causes and maintenance of genetic diversity. Prerequisite: Zoology 74L or a course in genetics. C-L: Zoology 286 and Genetics—The University Program. One course. *Antonovics, Uyenoyma, and H. Wilbur*

287S. Macroevolution. Evolutionary patterns and processes at and above the species level; species concepts, speciation, diversification, extinction, ontogeny and phylogeny, rates of evolution, and alternative explanations for adaptation and evolutionary trends. Prerequisite: one course in plant or animal diversity. C-L: Zoology 287. One course. *Mishler and Roth*

293L. Population Biology. Theoretical approach to population genetics, life table mathematics, life-cycle evolution in plants and animals, population dynamics, and regulation. Laboratories emphasize experimental methods. Individual projects and weekend field trips. Prerequisites: calculus and ecology and consent of instructor. C-L: Zoology 293L. One course. *Antonovics and H. Wilbur*

295S, 296S. Seminar. Credit to be arranged. *Staff*

COURSES CURRENTLY UNSCHEDULED

209L. Lichenology

219L. Benthic Marine Algae

243S. Classification of Angiosperms

258. Physiology of Growth and Development

263L. Tropical Seaweeds

MARINE LABORATORY

Botany 114L, 191, 192, 215L, 218, and 219L are offered during the summer at the Duke University Marine Laboratory, Beaufort, North Carolina. The Department of Botany also participates in the semester programs at the Marine Laboratory. See Marine Sciences in this bulletin and consult the *Bulletin of Duke University: Marine Laboratory* for further information.

THE UNIVERSITY PROGRAM IN GENETICS

Courses offered by the Department of Botany are an integral part of this interdepartmental program. Refer to the announcement in this bulletin under Genetics—the University Program, for a listing of other offerings.

THE MAJOR

For the A.B. Degree

This degree program is the general liberal arts major program. Preprofessional students should elect the bachelor of science degree program.

Prerequisite. Introductory college biology or advanced placement in botany.

Corequisites. Two courses in introductory chemistry (Chemistry 11, 12) or advanced placement in chemistry; one course in college mathematics or equivalent.

Major Requirements. A minimum of eight approved botany or closely related science courses, in addition to the prerequisite and corequisites: including 145L (plant diversity) and at least four courses selected from the following: 142L (plant systematics), 146L (plant ecology), 151L (plant physiology), 160L (plant anatomy), and 180 (principles of genetics); and one course in zoology (animal diversity or any course numbered 100 or above). The Director of Undergraduate Studies must approve the selection of any science courses in related departments to be included in the eight courses for the major. Students' programs are tailored to their interests and plans for the future.

For the B.S. Degree

This degree program is recommended for all preprofessional students.

Prerequisite. Introductory college biology or advanced placement in botany.

Corequisites. Chemistry through one semester of organic and one semester of biochemistry, two courses in college mathematics or equivalent, and one year of college physics.

Major Requirements. Eight science courses as described under major requirements for the A.B. degree with the exception of the one course in zoology. A course in statistics is recommended. The emphasis in this preprofessional program will depend on the student's interests; each program is arranged on an individual basis.

For the Interdepartmental Concentration and Biology Major

An interdepartmental program (e.g., in cell and molecular biology, physical biology, and marine biology) may be pursued instead of a departmental major. The appropriate Director of Undergraduate Studies in botany or zoology can help arrange for such programs. See requirements under Biology for a biology major.

Honors

The department offers a program for graduation with distinction in botany. See the section on honors in this bulletin. The program is usually initiated during the junior year and involves participation in at least two semesters of independent study (Botany 191, 192). The research paper which results from this experience is submitted to a departmental committee for review, followed by a discussion of the paper with the student. On the basis of the quality of the research report and the student's performance in the discussion of it, the committee may recommend the student for graduation with distinction in botany.

Canadian Studies Program

Professor Leach (political science), *Director*

The program in Canadian studies seeks to provide the student with an understanding of Canada and its problems and prospects. Students may undertake the program to supplement another major, or to complete a second major in Canadian studies, or as part of an interdepartmental concentration, or under Program II. Canadian studies may also be an area concentration in the comparative area studies major, described elsewhere in this bulletin. See sections below on the program and the major. The courses are described in the departmental and interdisciplinary listings.

COURSES WITH FULL CANADIAN CONTENT

The following courses count as one full course in the four required for the program in Canadian studies and in the eight required for the major in Canadian studies:

English

186. Canadian Literature in English. *Staff*

History

183S. Canada from the French Settlement. *Cahow*

Interdisciplinary Courses

184. An Introduction to Canada and Canadian Issues. See C-L: Interdisciplinary Course 184; also C-L: Comparative Area Studies, Economics 184, History 184, Political Science 184, and Sociology 184. *Leach*

282S. Canada. See C-L: Interdisciplinary Course 282S; also C-L: Anthropology 282S, Comparative Area Studies, History 282S, Political Science 282S, and Sociology 282S. *Leach*

COURSES WITH SIGNIFICANT CANADIAN CONTENT

Two of these partial content courses may count as one full course among the four required for the program in Canadian studies and among the eight required for the major in Canadian studies, but no more than two partial content courses may be counted as full content courses in this way. All other partial content courses may count only for a half credit for Canadian studies majors and programs.

Anthropology

204S. The Anthropology of Cities. *Fox or Smith*

Economics

265S. International Trade and Finance. By special arrangement this course may be counted as a full content course. *Tower*

French

114. Language and Civilization of Quebec. *Staff*

131S. French in the New World. *Hull*

132. Literature and History of Quebec. *Staff*

Health Administration

Students interested in this area should consult the Director of the Canadian Studies Program (2122 Campus Drive) for more information.

History

- 167S. United States and Canadian Constitutional Issues. *Cahow*
215-216. The Diplomatic History of the United States. *C. Davis*

Interdisciplinary Course

182. Media in Comparative Perspective. *J. Smith*
189. The Americas: A Survey of the Forces Shaping the Hemisphere. *Bergquist*

Music

74. Introduction to Jazz. *Jeffrey*

Political Science

175. Political Parties and Legislatures in Western Democracies. *Kornberg*
195. Comparative Political Behavior in the United States and Canada. *Kornberg*
293. Federalism. *Leach*

Sociology

170. Mass Communication. *Smith*
179. Sociology of Nationalism. *Tiryakian*

THE PROGRAM

In the Canadian Studies Program a student must take four courses with Canadian content or their equivalents. These must include Interdisciplinary Course 184. It is recommended that students who do not have the equivalent of two years of college level French should take French 181 and 182, Intensive French.

THE MAJOR

Corequisite. Completion of another major.

Major Requirements. Eight courses in Canadian studies, including Interdisciplinary Course 184 and seven other semester-course credits in courses on Canada with full or significant content at the 200 level, or approved independent study, or special reading courses. Two of the courses with significant Canadian content may count as half courses to make up the eight required courses. No more than two courses required for the first major may be counted for the Canadian studies major.

To complete the major in Canadian studies a student must also take at least two full years of college level French, or must possess an equivalent competence in the language as certified by the Department of Romance Languages.

Chemistry (CHM)

Professor Lochmüller, *Chairman*; Professor Wilder, *Director of Undergraduate Studies*; Professor Bonk, *Supervisor of Freshman Instruction*; Professors Arnett, Chesnut, Fraser-Reid, Jeffs, Krigbaum, A. McPhail, Palmer, Poirier, Porter, Smith, Strobel, and Wells; Associate Professors Baldwin, Crumbliss, Henkens, and Shaw; Assistant Professors Anderson, R. MacPhail, and Polniaszek; Professors Emeriti Bradsher, Brown, Gross, Hobbs, and Quin; Adjunct Professors Ghirardelli, Magat, Pitt, and Spielvogel; Adjunct Assistant Professor Switzer

Courses with laboratories include fifty to sixty hours of laboratory work per term.

11, 12. Principles of Chemistry. The introductory course for students who intend to take additional chemistry courses other than Chemistry 103. 11: emphasizes stoichiometry and atomic and molecular structures. 12: emphasizes thermodynamics, chemical kinetics, synthesis, and analysis. Laboratory work includes both qualitative and quantitative analysis. Prerequisites: one year of high school chemistry or consent of instructor; qualification for Mathematics 31; and for 12: Chemistry 11 or 41. Two courses. *Bonk and staff*

41, 42. Chemical Fundamentals. Generally paralleling Chemistry 11, 12, but enriched and discussion-oriented for selected able potential science majors. Laboratory.

Prerequisite: consent of instructor; for 42: Chemistry 11 or 41. Two courses. *R. MacPhail, A. McPhail, and Strobel*

103. Chemistry and Society. Past discoveries and current challenges: a chemical background for decisions involving energy, radiation, pollution, drugs, food additives, vitamins, and pesticides. For students not majoring in a natural science or continuing in chemistry. Not open to students having credit for Chemistry 11 or equivalent. One course. *Poirier, Wells, and staff*

117. Inorganic Chemistry. Bonding, structures, and reactions of inorganic compounds studied through physical chemical concepts. Prerequisite: Chemistry 161. One course. *Crumbliss, Palmer, and Wells*

118. Advanced Laboratory. Advanced laboratory course incorporating techniques from analytical, biological, inorganic, organic, and physical chemistry. Laboratory. Prerequisite: consent of instructor. One course. *Staff*

132. Quantitative and Instrumental Analysis. Practice in advanced quantitative analysis and in the use of chemical instrumentation. Theoretical and applied aspects of chemical and instrumental methods. Laboratory. Prerequisite: Chemistry 161. One course. *Anderson, Lochmüller, and Strobel*

151, 152. Organic Chemistry. The structures and reactions of the compounds of carbon. 151 laboratory: techniques of separation and structure determination. 152 laboratory: organic reactions and preparations. Prerequisite: Chemistry 12 or 42 or consent of Director of Undergraduate Studies; for 152: Chemistry 151. Two courses. *Arnett, Baldwin, Fraser-Reid, Jeffs, Porter, and Wilder*

151M, 152M. Organic Chemistry. The structures and reactions of the compounds of carbon. The courses, principally for majors, are similar to 151 and 152, but are taught in a more interactive format made possible by a marked reduction in class size. The M suffix will not appear on the transcript. Laboratory. Prerequisite: Chemistry 12 or 42 and consent of the instructor; for 152M: Chemistry 151 or 151M. Two courses. *Arnett, Baldwin, Fraser-Reid, Jeffs, Porter, and Wilder*

152P. Preceptorial. Elective for students in Chemistry 152. Laboratory. Prerequisite: consent of instructor. *Staff*

155. Intermediate Organic Chemistry: Spectral, Structural, and Synthetic. Advanced study of spectral properties of organic compounds, the influence of structure on reactivity, and important synthetic methods in organic chemistry. Laboratory work emphasizes both synthetic methods and the systematic identification of compounds by their spectral and chemical properties. Prerequisite: Chemistry 152 or 152M. One course. *Baldwin and Fraser-Reid*

161. Physical Chemistry. Fundamentals of theoretical chemistry with particular emphasis on chemical thermodynamics and kinetics. Laboratory. Prerequisites: Chemistry 152 or 152M and Physics 52 and Mathematics 32 or 34. One course. *Chesnut, Henkens, Krigbaum, R. MacPhail, A. McPhail, Poirier, and Smith*

162. Physical Chemistry. Fundamentals of theoretical chemistry with particular emphasis on quantum chemistry, molecular structure, and molecular spectroscopy. Laboratory. Prerequisites: Chemistry 161 and either Mathematics 103 or 105 or consent of instructor. One course. *Chesnut, Henkens, Krigbaum, R. MacPhail, A. McPhail, Poirier, and Smith*

175. Molecular Basis of Biological Processes. A survey of the structures, reactions, and mechanisms of action of important biological molecules. Prerequisite: Chemistry 152 or 152M. One course. *Shaw*

176. Biophysical Chemistry. The physical chemical principles of and experimental methods employed in the study of biological macromolecules. Students may not receive credit for both Chemistry 176 and 196S. Prerequisites: Chemistry 161 and 175. One course. *Henkens*

191, 192. Independent Study. Supervised reading and research. Prerequisite: consent of Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Supervised reading and research. Prerequisites: Chemistry 191, 192, and consent of Director of Undergraduate Studies. Two courses. *Staff*

195S, 198S. Seminar. Topics from various areas of chemistry, changing each year. For example: organic chemistry of biologically important compounds, chemical basis of pharmacology, metal ions in biological systems. Open to senior chemistry majors or by consent of instructor. Two courses. *Staff*

196S. Seminar. Selected topics in physical chemistry of biological macromolecules. Students may not receive credit for both Chemistry 176 and 196S. Prerequisites: Chemistry 161 and 175. One course. *Henkens and Shaw*

197S. Seminar. Special topics in biological chemistry (e.g., immunochemistry, molecular biology). Prerequisite: Chemistry 161; Chemistry 175 recommended. One course. *Staff*

For Seniors and Graduates

201. Molecular Spectroscopy. Selected spectroscopic methods in the study of molecular structure. Symmetry and group theoretical basis for selection rules, theories of magnetic and optical resonance, and interpretation of spectra; examples from both inorganic and organic chemistry. Prerequisite: consent of Director of Undergraduate Studies. One course. *Staff*

203. Quantum Chemistry. Basic principles of quantum and group theoretical methods. Topics include symmetry, a review of the fundamentals, and the mathematical foundations of quantum theory. Emphasis on the application of molecular orbital theory to organic and inorganic systems. Prerequisite: consent of Director of Undergraduate Studies. One course. *Staff*

205. Structure and Reaction Dynamics. Structure and mechanisms in organic and inorganic compounds, substitution reactions, linear free energy relations, and molecular rearrangements. Emphasis on the use of kinetic techniques to solve problems in reaction mechanisms. Prerequisite: consent of Director of Undergraduate Studies. One course. *Staff*

207. Principles of Kinetics, Thermodynamics, and Diffraction. Prerequisite: consent of Director of Undergraduate Studies. One course. *Staff*

209. Advanced Chemistry. A combination of three one-third course segments from Chemistry 201, 203, 205, and 207. Interested students should consult the Director of Undergraduate Studies for scheduling. Prerequisite: consent of Director of Undergraduate Studies. One course. *Staff*

275, 276. Advanced Studies. (1) Analytical chemistry, (2) inorganic chemistry, (3) organic chemistry, and (4) physical chemistry. Open to especially well-prepared undergraduates by consent of Director of Undergraduate Studies. Two courses. *Staff*

THE MAJOR

Differing major programs are offered under the baccalaureate degrees. The Bachelor of Arts degree programs permit greater flexibility in allowing students to select

an area of concentration while satisfying the junior-senior small group learning experience requirements through seminar courses (option one) or through independent study in chemistry or related departments (option two). Of special significance is the area of biological chemistry; under the direction of the biological chemistry program coordinator, students may specialize in this area with either seminars (option three) or independent study in chemistry or related departments (option four) satisfying the junior-senior small group learning experience requirement. The Bachelor of Science degree program provides in-depth preparation for graduate study in chemistry; it is accredited by the American Chemical Society.

For the A.B. Degree

Prerequisites. Chemistry 11, 12; or Chemistry 41, 42; or advanced placement. Mathematics 31, 32 (or 33, 34); Physics 51, 52.

Major Requirements. Chemistry 132, 151, 152, 161, *plus* one of the following options:

1. Two of the following: Chemistry 117, 155, 162, 175, 176, 195S, 196S, 197S, 198S.
2. One of the following: Chemistry 117, 155, 162, 175; *plus* Chemistry 191, 192 or the equivalent in a natural science, in mathematics, engineering, or in a basic science department in the School of Medicine.
3. Chemistry 175, 195S or 197S, and 176 or 196S.
4. Chemistry 175 and 176; and Chemistry 191, 192 in a biochemically related area, or the equivalent in a biological area, biomedical engineering, or basic science department in the School of Medicine.

Recommendations. Computer Science 51 or Engineering 51, Mathematics 103 or 105 (for options one and two); Chemistry 162; two courses in a foreign language or the equivalent. Students planning graduate study are advised to take these recommended courses and to consult with advisers regarding appropriate additional courses.

For the B.S. Degree

Prerequisites. Chemistry 11, 12; or Chemistry 41, 42; or advanced placement. Mathematics 31, 32 (or 33, 34); 103 (or 105); Physics 51, 52; two courses in German or Russian or the equivalent.

Major Requirements. Chemistry 117, 132, 151, 152, 161, 162, *plus* four of the following courses: Chemistry 118, 155, 175, 176, 191, 192, 195S, 196S, 197S, 198S, 201, 203, 205, 207, 209, 275, or 276, with at least two being selected from the laboratory courses 118, 155, 191, 192. In an exceptional case and with the prior approval of the Director of Undergraduate Studies, a student may substitute one advanced level nonindependent study course, or a two-course independent study sequence, in an appropriate science department in Trinity College, the School of Engineering, or the School of Medicine for one of the two optional nonlaboratory chemistry courses. A course directly paralleling one offered by the chemistry department may not be substituted. Chemistry 201, 203, 205, and 207 are offered also in one-third semester segments; in some instances a student may wish to take some combination of three of these segments by registering for Chemistry 209. Additional details may be obtained from the Director of Undergraduate Studies.

Recommendations. Computer Science 51 or Engineering 51; Mathematics 104; Physics 100. Students planning graduate study in chemistry should consult with advisers regarding appropriate additional courses.

Honors

The department offers a program for graduation with distinction in chemistry. See the section on honors in this bulletin. The program involves two semesters of independent study, taken either in the chemistry department (Chemistry 191, 192),

or as part of the biological chemistry program with the consent of the program coordinator. A research paper based upon the independent study and nomination by the research supervisor form the basis for consideration by a departmental committee. The committee may recommend the student for graduation with distinction in chemistry. Additional details may be obtained from the Director of Undergraduate Studies.

Chinese

For courses in Chinese, see Asian and African Languages.

Classical Studies (CS)

Professor Richardson, *Chairman*; Associate Professor Boatwright, *Director of Undergraduate Studies*; Professors Newton and Oates; Associate Professors Burian, Rigsby, Stanley, and Younger; Professor Emeritus Willis; Visiting Professor Michels

The essential purpose of classical studies is to increase knowledge and understanding of the roots of Western culture in the civilizations of Greece and Rome. Towards this aim, the department offers courses and majors in three areas: Latin, Greek, and classical studies. Concentration in the languages offers students the unique experience of exploring at first hand the literature, history, and thought of antiquity. In the process, students will gain a deeper insight into language itself, as well as an appreciation of the problems of interpretation and the varieties of evidence upon which interpretation may be based. For students interested in history, ancient art, or archaeology, courses in classical studies offer a means of assessing the intentions and achievements of the record, the culture, and the material remains of Greece and Rome in their own rich and varied context.

A secondary aim is, and has been by a centuries-old tradition, the development of a keener perception and understanding of the cultural forces at work in the contemporary world. As a result, the field of classical studies is a valuable and respected foundation for advanced work in other academic disciplines as well as professional programs in law, medicine, and finance.

GREEK (GRK)

1-2. Elementary Greek. A study of grammar and an introduction to reading. Two courses. *Burian*

10. Intensive Elementary Greek. Accelerated introduction to ancient Greek, combining in one semester the work of Greek 1-2. A study of grammar with selected readings in prose and poetry. Not open to students who have had Greek 1 or 2. Two courses. *Rigsby*

11-12. Elementary Modern Greek. An introduction to literary and conversational demotic Greek. Two courses. *Younger*

63, 64. Intermediate Greek. Introduction to Greek prose and poetry. 63: Plato's *Republic I* or *Apology*. 64: Euripides' *Medea* or Homer's *Odyssey*. Two courses. *Staff*

103S, 104S. Studies in Greek Literature. 103S: the literature of classical Greece: Herodotus and Aristophanes. 104S: the literature of archaic Greece: Homer and lyric poets. Two courses. *Burian*

117T. Greek Prose Composition. The course content is determined by the needs of the students enrolled. One course. *Staff*

203. Homer. Problems of language and structure in the *Iliad*; present state of Homeric scholarship. One course. *Stanley*

205. Greek Lyric Poets. Fragments of the early lyric poets; selected odes of Pindar and Bacchylides. One course. *Burian or Stanley*

207. The Dramatists. Readings and studies of selected plays by the major playwrights Aeschylus, Sophocles, Euripides, and Aristophanes. One course. *Burian*

222. The Historians. Readings and studies in the major Greek historians Herodotus, Thucydides, and Xenophon. One course. *Oates or Stanley*

Courses offered each year on demand in consultation with the Director of Undergraduate Studies:

87, 88. Sight Reading in Greek Prose. Readings from easy Attic prose writers. Prerequisites: one year of college Greek or the equivalent and consent of instructor. Two half courses. *Staff*

191, 192. Independent Study. Directed reading and research. Open only to qualified juniors and seniors. Two courses. *Staff*

193, 194. Directed Research in Greek. Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. Open only to senior majors. Two courses. *Staff*

Note: Greek 181S, 182S are offered each summer. They provide an intensive introduction to the language and literature. Prerequisite: proficiency in another language. Two courses each. Staff.

LATIN (LAT)

1-2. Elementary Latin. Study of the structure of the language (forms, vocabulary, syntax, and pronunciation); selected readings in prose and poetry. Two courses. *Stanley*

63, 64. Intermediate Latin. Introduction to Latin prose and poetry. 63: selected prose, including Caesar. 64: three books of Vergil's *Aeneid*. Two courses. *Boatwright*

103S, 104S. Studies in Latin Literature. 103S: the Late Republic, including Catullus and Cicero. 104S: the Age of Augustus, including Horace and Livy. Two courses. *Newton*

105S. Ovid: The Metamorphoses. The poem studied as representative of Ovid's varied narrative art, as the largest-scale Roman treatment of classical myths, and in the light of the distinctively Ovidian attitude toward Augustanism. One course. *Newton*

106S. Roman Satire. A survey of the genre with concentration on Horace and Juvenal. One course. *Richardson*

115S. Tacitus. Selections from the *Annales*, with concentration on the books devoted to the reign of Nero. One course. *Richardson*

117T. Latin Prose Composition. The course content is determined by the needs of the students enrolled. One course. *Staff*

151S. Cicero. One course. *Richardson*

202. Early Latin. Representative authors and inscriptions from the early years of the Roman Republic. One course. *Richardson*

203. Epic: Vergil. The *Aeneid*. One course. *Newton*

215. The Historians. Representative historians, including one or more of the following: Livy, Caesar, Sallust, Tacitus. One course. *Boatwright or Richardson*

221. Medieval Latin. Selected works of the Latin Middle Ages from Prudentius to the humanists. Genres studied usually include the hymn, sequence, drama, lyric,

saints' lives, chronicle, epic, and epistle. C-L: Medieval and Renaissance Studies. One course. *Newton*

Courses offered each year on demand in consultation with the Director of Undergraduate Studies:

87, 88. Sight Reading in Classical, Medieval, and Renaissance Latin. Offered especially for students in fields other than classical studies who wish to maintain and refresh their Latin. (Open to students enrolled in other courses in Latin only on the recommendation of their instructors.) C-L: Medieval and Renaissance Studies. Two half courses. *Staff*

191, 192. Independent Study. Directed reading and research. Open to qualified juniors and seniors. Two courses. *Staff*

193, 194. Directed Research in Latin. Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. Open only to senior majors. Two courses. *Staff*

Note: The designation of Latin 100 applies to one course credit given for advanced placement which will be awarded for scores of 4 or 5 on one or more of the College Board Advanced Placement tests in Latin. One course credit may be earned by a score of 3 if the student successfully completes one further semester of Latin.

Latin 181S, 182S are offered each summer. They provide an intensive introduction to the language and literature. Prerequisite: proficiency in another language. Two courses each. Staff.

Courses Currently Unscheduled

112S. Comedy

153S. Petronius

201. The Verse Treatise

204. Epic

210. Lyric and Occasional Poetry

211. Elegiac Poets

CLASSICAL STUDIES (CS)

11S. Greek Civilization. The culture of the ancient Greeks from the Bronze Age to Alexander the Great: art, literature, history, philosophy, and religion. Not open to students who have had Classical Studies 53 or History 53. One course. *Staff*

12S. Roman Civilization. The culture of the ancient Romans from their beginnings to Constantine: art, literature, history, philosophy, and religion. Not open to students who have had Classical Studies 54 or History 54. One course. *Staff*

53. Greek History. The political and intellectual history of the Hellenes from earliest times to the death of Alexander the Great. Not open to students who have had Classical Studies 11S. C-L: History 53. One course. *Boatwright*

54. Roman History. The Roman Republic and Empire to the Late Antique. Not open to students who have had Classical Studies 12S. C-L: History 54. One course. *Boatwright*

57S, 58S. Seminars in Classical Studies. Aspects of the history, art, and literature of classical Greece and Rome. Topics have included: technology of the ancient world and violence in ancient Rome. For freshmen and sophomores. Two courses. *Staff*

- 63. The Epic.** Reading in translation of major epics from antiquity and the Middle Ages, such as *Gilgamesh*, Homer's *Iliad* and *Odyssey*, Vergil's *Aeneid*, and *Beowulf*. One course. *Burian*
- 64. Drama of Greece and Rome.** Reading in translation of Greek and Roman tragedies (Aeschylus, Sophocles, Euripides, Seneca) and comedies (Aristophanes, Menander, Plautus, Terence). C-L: Drama 64. One course. *Burian*
- 115. The Classical Tradition.** The notion of the "classical" from the creation of the archetype to the present. One course. *Burian*
- 117. Ancient Mythographers.** Myth in classical and medieval writers from Hesiod to Boccaccio. C-L: Medieval and Renaissance Studies. One course. *Newton*
- 119. The Augustan Age.** Major works of some of Rome's greatest writers (including Vergil, Horace, Livy, and Ovid), studied in translation, and the culture of the period (44 B.C. to A.D. 14). One course. *Newton*
- 125. Greek Art and Archaeology.** Greek architecture, sculpture, and painting from the Bronze Age to the classical period. Study of objects in the Duke classical collection. One course. *Younger*
- 126. Roman Art and Archaeology.** Roman achievement in architecture, decoration, portraiture, and relief sculpture, from the Villanovans to the Antonine emperors. One course. *Younger*
- 133. Early Greece and the Near East.** Political, social, and intellectual developments from the world of Homer to the Persian Wars. C-L: History 100. One course. *Oates*
- 134. The Athenian Empire.** Imperial democracy at Athens and its consequences for the *polis*. C-L: History 125. One course. *Oates*
- 135. Alexander the Great.** His career and the effects of his conquests. C-L: History 126. One course. *Oates*
- 137. The Roman Revolution.** Rome from the time of the Gracchi to the death of Augustus. C-L: History 103. One course. *Oates*
- 138. The Decline and Fall of the Roman Empire.** From the reign of Nero to the period of Justinian. C-L: History 152. One course. *Oates*
- 145. Rome: History of the City.** The development of the urban plan and its major monuments through the ages; the influence of the ancient Republic and Empire, the Papacy, and the modern secular state; change and continuity in artistic forms and daily life. Taught on site in Italy. One course. *Boatwright or Burian*
- 147. Ancient Greece.** On-site study of the cultures in Greece from Neolithic to Medieval, concentrating on Athens, the Peloponnese, Crete, and the Cyclades. Pre-requisite: Classical Studies 11S or 53 or 125 or 126 or History 53 or consent of instructor. One course. *Younger*
- 155. The Aegean Bronze Age.** Application of archaeological techniques and procedures to problems in the development of the Minoan and Mycenaean civilizations. One course. *Younger*
- 161. Athens.** The city from antiquity (c. 1500 B.C.) to the present, concentrating on its monuments, self-image, and influence. One course. *Younger*
- 191, 192. Independent Study.** Directed reading and research. Open only to qualified juniors and seniors. Two courses. *Staff*

193, 194. Directed Research in Classical Studies. Research culminating in the writing of one longer or two shorter papers as partial fulfillment of the requirements for graduation with distinction. Open only to senior majors. Two courses. *Staff*

195S, 196S. Junior Seminars in Classical Studies. Specific aspects of the history, art, and literature of classical Greece and Rome. Open only to qualified juniors and seniors; some knowledge of classical studies and history desirable, but not strictly necessary. Topics have included: sexual roles in antiquity, and Imperial Rome. Two courses. *Staff*

197S. Senior Seminar in Classical Studies. An intensive investigation into a current problem in classical studies, designed to teach methodology as well as knowledge of ancient and modern evidence and scholarship. Required of majors in Latin, Greek, and classical studies. One course. *Staff*

236S. Roman Painting. The techniques, iconography, and use in decoration. One course. *Richardson*

256. The Fourth Century through Alexander. One course. *Rigsby*

258. Social and Cultural History of the Graeco-Roman World. One course. *Staff*

261. The Roman Revolution, 146-30 B.C. One course. *Rigsby*

Courses Currently Unscheduled

127. Early Christian Culture: Evidence of Art and Literature

144. Ancient Cities: Rome and Its Colonies

146. City and Country in Ancient Italy

162. Pompeii

231S. Greek Sculpture

232S. Greek Painting

233. Greek Architecture

234. Roman Sculpture

235S. Roman Architecture

THE MAJOR

Students may choose first or second majors in Greek, Latin, or in classical studies (ancient history, civilization, or archaeology).

Students majoring in either Greek or Latin who contemplate graduate work are reminded of the necessity for competence in both languages and a reading knowledge of French and German for all higher degrees.

Prospective second majors in Latin, Greek, or classical studies are urged to consult with the Director of Undergraduate Studies at the earliest feasible time, preferably by the sophomore year.

Majors are eligible for nomination to one semester during their junior year at the Intercollegiate Center for Classical Studies in Rome, of which Duke University is a founding member, or at the College Year in Athens, at a cost comparable to that of a semester at Duke. Financial assistance at Duke can usually be transferred, and arrangements are made through the University. Courses in Greek, Latin, ancient history, and archaeology taken in these programs are counted toward the major requirements. For further information, see the section on study abroad.

Greek

Prerequisite. Greek 2 or equivalent.

Major Requirements. Six courses in Greek above the level of Greek 12, and Classical Studies 197S. In addition, students will be required to pass an examination testing proficiency in Greek composition or to complete Greek 117T. Students entering with three or more years of ancient Greek are urged to consult with the Director of Undergraduate Studies to develop a program suited to their specific needs and interests.

Related Work. Greek majors normally take at least four courses in Latin and are also encouraged to take course work in ancient history and/or archaeology. The nature and amount of related work, however, may vary with the student.

Latin

Prerequisite. Latin 64 or equivalent.

Major Requirements. Six courses in Latin above the level of Latin 100, and Classical Studies 197S. In addition, students will be required to pass an examination testing proficiency in Latin composition or to complete Latin 117T.

Related Work. Latin majors normally take at least four courses in Greek and are also encouraged to take course work in ancient history and/or archaeology. The nature and amount of related work, however, may vary with the student.

Classical Studies (Ancient History, Civilization, or Archaeology)

Prerequisites. Classical Studies 11S and 12S; or 53 and 54; or 57S and 58S.

Major Requirements. Eight courses at the 100 level or above, including Classical Studies 197S and at least one other seminar or course of independent study. Reading knowledge of Latin or Greek to the level of Latin 64 or Greek 64. Two courses in the ancient languages above that level may be counted toward the major.

Honors

The department offers work leading to graduation with distinction. See the section on honors in this bulletin.

Comparative Area Studies

Associate Professor Gereffi (sociology), *Director*

The undergraduate major in comparative area studies offers a Bachelor of Arts degree to students interested in the interdisciplinary study of societies and cultures of a particular region of the world. In addition, students may elect to complement the study with a concentration in another world area or in the comparative study of international problems. Students in the program are currently studying Latin America, Africa, the Middle East, Russia, South Asia, East Asia, Western Europe, and Canada. Although the program provides any student with a solid liberal arts background, it is primarily designed for those with career objectives in academia, government (especially the foreign service), international business, international law, health and environmental programs, the United Nations and international agencies, and private international religious or service organizations.

The program encourages the study of language, literature, religion, and art of the chosen area as well as analysis of its social, historical, and political roots and problems. Normally a student will concentrate in either the humanities or the social sciences. Many comparative area studies majors "double-major" in comparative area studies and in such fields as anthropology, history, political science, Spanish, and French.

The major draws its offerings from courses taught by over eighty Duke professors in a dozen cooperating departments. Interdisciplinary and intercultural courses have

been designed specifically for majors in the program to help place those societies chosen for specialization in a broad comparative perspective. These courses stress the interrelationship of developed and underdeveloped societies and probe the difficulties and advantages of comparative, interdisciplinary, and intercultural research.

In addition to its director, the program is administered by an advisory committee representing the various areas and cooperating departments.

Advising: Students must identify their primary area focus. Faculty members with expertise in each area are available to provide advice concerning selection of an area and coursework in the major. Students wishing to specialize in an area not indicated in the categories of courses that follow will be required to submit a proposed course of study to the advisory committee for approval. Selection of area is normally done by the end of the sophomore year. The program encourages close relationships between faculty and students working in similar areas.

Study Abroad or on Another Campus: The program encourages qualified and interested students to engage in sustained study abroad in their chosen area for a semester or for an academic year. Duke students are eligible for a variety of programs now operating in Africa, Asia, Canada, Europe, and Latin America. Students can also take advantage of special programs in the United States for intensive language training, legislative or foreign service study in Washington, and internship programs at the United Nations. Occasionally summer internships in a variety of structured programs, including international business, are available for qualified students.

The courses listed below may be taken for credit as introductory courses, comparative courses, and area courses. Others may be selected with the approval of the Director. Courses in basic language instruction are not included, but courses in advanced language and literature that can be used to meet the language requirement (not the area requirement) for the major are shown under the appropriate area headings. For a complete description consult the listing under the appropriate department.

INTRODUCTORY COURSES

Anthropology 94. Introduction to Cultural Anthropology. *Staff*

History 25. Introduction to World History: to 1700. *Staff*

History 26. Introduction to World History: since 1700. *Staff*

History 75, 76. The Third World and the West. *Bergquist, R. Davis, Dirlik, Ewald, Gordon, and Richards*

Interdisciplinary Course 109. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy. *Staff*

Music 136. Introduction to Non-Western Music. *Seebass*

Political Science 92. Comparative Politics. *Valenzuela*

Religion 57. Introduction to the Religions of Asia. *Bradley, Corless, Lawrence, Partin, or Robinson*

Sociology 110. Comparative Sociology. *Gereffi, Myers, Smith, Stark, or Tiryakian*

COMPARATIVE COURSES

Anthropology

115. Gender: A Cross-Cultural Perspective. *Quinn, Smith, or Trouillot*

116. Language, Ethnicity, and New Nations. *Apte*

119. Language, Culture, and Society. *Apte or Weller*

129. The Black Experience in the Americas: Roots and Directions. *Trouillot*

130. Social and Cultural Change. *O'Barr or Smith*

134. Political Anthropology. *Domínguez, O'Barr, or Smith*

136S. Cross-Cultural Studies of Socialization. *Quinn*

140. The Anthropology of Race. *Fox*

155. Anthropological Approaches to Religion. *Weller*

168. Beginnings of Civilization. *Zagarell*

189. The Americas: A Survey of the Forces Shaping the Hemisphere. *Bergquist*

204S. The Anthropology of Cities. *Fox or Smith*

215S. The Anthropology of Women: Theoretical Issues. *Domínguez, Quinn, Smith, or Trouillot*

228S. Slavery and Society. *Domínguez*

239. Culture and Ideology. *Trouillot or Weller*

Comparative Literature

- 121. Introduction to Arabic and Asian Literatures. *Cooke and Fowler*
- 135. The Novel of the Self: East and West. *Fowler*
- 155. Comparative Perspectives in Literature and Social Change: From Plantation to City. *Willis*

Economics

- 219S. Economic Problems of Underdeveloped Areas. *Kelley or Naylor*
- 286S. Economic Policy Making in Developing Countries. *Gillis*

History

- 110. Labor Movements in the Americas. *Bergquist*
- 120. History of Socialism and Communism. *Lerner*
- 167S. United States and Canadian Constitutional Issues. *Cahow*
- 168S. The Atlantic Slave Trade. *Gaspar*
- 189. The Americas: a Survey of the Forces Shaping the Hemisphere. *Bergquist*
- 239S. History of Socialism and Communism. *Lerner*
- 243-244. Marxism and History. *Dirlik*

Interdisciplinary Courses

- 125. Strategies of Comparative Analysis. *Gereffi*
- 150S. Comparative Area Studies Senior Seminar. *Staff*
- 180. Psychosocial Aspects of Human Development. *Martin Lakin and Maddox*
- 182. Media in Comparative Perspective. *Smith*
- 189. The Americas: A Survey of the Forces Shaping the Hemisphere. *Bergquist*
- 234S. Political Economy of Development: Theories of Change in the Third World. *Bergquist, Fox, Gereffi, Smith, Trouillot, and Valenzuela*

Political Science

- 107. Comparative Environmental Policies. *McKean*
- 110. The Americas: A Survey of the Forces Shaping the Hemisphere. *Bergquist*
- 163. Gender, Politics and Policy: The Third World Case. *O'Barr*
- 172. Political Economy of Global Natural Resources. *Johns*
- 173S. Political Economy of World Food Problems. *Johns*
- 175. Political Parties and Legislatures in Western Democracies. *Kornberg*
- 180. Media in Comparative Perspective. *Smith*
- 195. Comparative Political Behavior in the U.S. and Canada. *Kornberg*
- 235S. Comparative Development of Islam. *Braibanti*
- 242S. Comparative Law and Policy: Ethnic Group Relations. *Horowitz*
- 249. Comparative International Development and Technology Flow. *Braibanti*
- 277. Comparative Party Politics. *Kornberg or Lange*
- 284S. Public Policy Process in Developing Countries. *Ascher*
- 293. Federalism. *Leach*

Public Policy Studies

- 242S. Comparative Law and Policy: Ethnic Group Relations. *Horowitz*
- 284S. Public Policy Process in Developing Countries. *Ascher*
- 286S. Economic Policy Making in Developing Countries. *Gillis*

Religion

- 71A, 72A. Freshman-Sophomore Seminars: African and Asian Traditions. *Staff*
- 142. Comparative Mythology. *Partin*
- 143. Mysticism. *Bradley*
- 195A, 196A. Junior-Senior Seminars: African and Asian Traditions. *Staff*
- 195C, 196C. Junior-Senior Seminars: Analytic, Comparative, and Constructive Studies. *Staff*

Sociology

- 118. Sex Roles and Society. *O'Rand*
- 170. Mass Communication. *Smith*
- 171. Comparative Health Care Systems. *Maddox*
- 178. Colonialism, Neocolonialism, and Internal Colonialism. *Tiryakian*
- 179. Sociology of Nationalism. *Tiryakian*
- 180. Modern Revolutions. *Stark or Tiryakian*
- 181. Contemporary Socialist Societies. *Stark*
- 182. Media in Comparative Perspective. *Smith*
- 189. The Americas: A Survey of the Forces Shaping the Hemisphere. *Bergquist*
- 201S. Social Change. *Gereffi or Tiryakian*
- 203. Comparative Aspects of Societal Transformation. *Simpson or Smith*
- 233. Culture, Religion, and Modernity. *Tiryakian*
- 241. Social Stratification. *Campbell, O'Rand, or Stark*

243. Population Dynamics and Social Change. *Myers*
 298S. Transnational Corporations in the Third World Economy. *Gereffi*

AREA COURSES: AFRICA

History

- 115, 116. History of Africa. *Ewald*
 195S.23, 196S.23. Issues in the History of Tropical Africa. *Ewald*

Political Science

- 161S. Comparative Government and Politics: Africa. *Johns*
 171. Politics of South African Apartheid. *Johns*
 280S. Comparative Government and Politics: Sub-Saharan Africa. *Staff*

Religion

265. Religions of the West Africa Diaspora. *Lincoln*

AREA COURSES: CANADA

English

186. Canadian Literature in English. *Staff*

French

114. Language and Civilization of Quebec. (Taught in Montreal.) *Staff*
 131S. French in the New World. *Hull*
 132. Literature and History of Quebec. (Taught in Montreal.) *Staff*
 169. The Contemporary Novel in French Canada. *Staff*

History

- 183S. Canada from the French Settlement. *Cahow*

Interdisciplinary Courses

184. An Introduction to Canada and Canadian Issues. *Leach*
 282S. Seminar on Canada. *Leach*

Sociology

244. Human Ecology and Urban Systems. *Myers or Smith*

AREA COURSES: EAST ASIA

Anthropology

121. China: Tradition and Transformation. *Weller*
 131. Socialism and Society in China. *Weller*
 163. Foundations of Chinese Civilization. (Taught in China.) *R. Davis, Dirlik, Kunst, or Weller*

Art

165. Far Eastern Ceramics. *Lee*

Chinese

- 125, 126. Advanced Chinese. *Staff*
 135, 136. Introduction to Modern Chinese Literature. *Kunst*
 141S. Chinese Literature in Translation. *Wang*
 142. Classical Chinese Nature Poetry in Translation. *Wang*
 171. The Novel in Modern China. *Kunst*
 Additional Chinese courses are taught in Beijing and Nanjing as part of the Duke Study in China Program.

History

141. Imperial China. *R. Davis*
 142. China: Roots of Revolution. *Dirlik*
 143. Ancient and Early Modern Japan. *Gordon*
 144. The Emergence of Modern Japan. *Gordon*
 163. Foundations of Chinese Civilization. (Taught in China.) *R. Davis, Dirlik, Kunst, or Weller*
 195S.07, 196S.07. Socialism and Revolution in East Asia. *Dirlik*
 195S.17, 196S.17. Processes of Development in Traditional and Modern Japan. *Gordon*
 195S.30, 196S.30. Traditions in China and the West. *R. Davis*
 243, 244. Marxism and History. *Dirlik*

Japanese

- 155, 156. Readings in Modern Japanese. *Fowler*
 161. Modern Japanese Fiction in Translation. *Fowler*

Political Science

- 111. Contemporary Japanese Politics. *McKean*
- 132. Politics of Asia. *Lomperis*
- 149. United States and East Asia. *McKean*
- 169. Politics in Revolutionary China. *McKean*
- 211S. Current Problems and Issues in Japanese Politics. *McKean*

Religion

- 141. Religions of China and Japan. *Corless*
- 149. Buddha and Buddhism. *Corless*
- 218. Religion in Japan. *Corless*
- 287. The Scriptures of Asia. *Bradley*
- 288. Buddhist Thought and Practice. *Corless*

AREA COURSES: LATIN AMERICA

Anthropology

- 124S. The American Indian. *Staff*
- 127. Social Transformations in Central America. *Smith*
- 128. Caribbean Societies and Cultures. *Domínguez or Trouillot*
- 173S. Revolutions in Latin America. *Staff*

Art

- 178. Pre-Columbian Art and Archaeology. *Sund*

History

- 128. The United States and Latin America. *Bergquist*
- 131. Mexico and the Caribbean from the Wars of Independence to the Present. *TePaske*
- 132. Major South American Nations, 1850 to the Present. *Bergquist*
- 173. History of Spain from Late Medieval Times to the Present. *TePaske*
- 174. History of Colonial Hispanic America from Pre-Columbian Times to the Wars of Independence. *TePaske*
- 177. Modern Latin America. *Bergquist*
- 195S.22, 196S.22. Problems in Latin-American History. *Bergquist or TePaske*
- 231S, 232S. Problems in the History of Spain and the Spanish Empire. *TePaske*
- 265S. Problems in Latin American History. *Bergquist*

Political Science

- 114. United States Foreign Policy and Latin America. *Valenzuela*
- 151. Introduction to Latin-American Politics. *Valenzuela*
- 253S. Comparative Government and the Study of Latin America. *Valenzuela*

Portuguese

- 181. Brazilian Portuguese. *Wheeler*
- 182. Topics in Portuguese and Brazilian Literature and Culture. *Wheeler*

Spanish

- 105, 106. Introduction to Spanish-American Literature. 105: *Ross*; 106: *Fein*
- 107S. Spanish-American Short Fiction. *Fein*
- 108S. Spanish Traditional Poetry. *Garcí-Gómez*
- 131. Topics of Hispanic Civilization. *Staff*
- 133S. Spanish-American Civilization. *Fein*
- 146. The Spanish-American Novel. *Fein*
- 166. Nineteenth-Century Prose Fiction. *Pérez*
- 171. Literature of Contemporary Spain. *Osuna*
- 210. History of the Spanish Language. *Garcí-Gómez*
- 245. Modern Spanish-American Poetry. *Fein*
- 246. Modern Spanish-American Fiction. *Pérez*

AREA COURSES: MIDDLE EAST

Anthropology

- 126. Middle East: Wars, Revolutions, and Social Change. *Domínguez*
- 147, 148. Introduction to Islamic Civilization. *Lawrence and staff*
- 241. The Rise of Civilization in Mesopotamia and Iran. *Zagarell*

Arabic

- 100. Music and Literature in North African Culture. (Taught in Morocco.) *Cooke and Silver*
- 173S. Women in Arabic Literature. *Cooke*

Art

120. The Art of Egypt and the Ancient Near East. *Castriota*

History

- 101G, 102G. Introduction to Islamic Civilization. *Lawrence and staff*
159S. The Palestine Problem and United States Public Policy. *Kuniholm*
187. History and Religions of North Africa. (Taught in Morocco.) *Lawrence*

Interdisciplinary Courses

- 162, 163. Introduction to Islamic Civilization. *Lawrence and staff*
164. History and Religions of North Africa. (Taught in Morocco.) *Lawrence*

Political Science

- 177, 178. Contemporary Social and Political Development in the Islamic World. *Braibanti*
235S. Comparative Development of Islam. *Braibanti*

Public Policy Studies

- 175S. The Palestine Problem and United States Public Policy. *Kuniholm*
257. United States Policy in the Middle East. *Kuniholm*

Religion

51. Introduction to Judaic Civilization. *Bland or E. Meyers*
132D. Palestine in Late Antiquity. *E. Meyers*
133. The Foundations of Post-Biblical Judaism. *E. Meyers*
134. Jewish Mysticism. *Bland*
135. Jewish Religious Thought. *Bland*
136. Contemporary Jewish Thought. *Bland or E. Meyers*
152. Islamic Mysticism. *Lawrence*
162, 163. Introduction to Islamic Civilization. *Lawrence and staff*
164. History and Religions of North Africa. (Taught in Morocco.) *Lawrence*
243. Archaeology of Palestine in Biblical Times. *C. Meyers*
244. The Archaeology of Palestine in Hellenistic-Roman Times. *C. Meyers or E. Meyers*
283. Islam and Modernism. *Lawrence*
284. The Religion and History of Islam. *Partin*

AREA COURSES: RUSSIA AND EAST EUROPE

Economics

293. Soviet Economic History. *Trembl*
294S. Soviet Economic System. *Trembl*

History

120. History of Socialism and Communism. *Lerner*
161, 162. History of Modern Russia. *Miller*
180. The Soviet Experience. *Lerner*
195S.18, 196S.18. Problems in the History of Russia before 1917. *Lerner or Miller*
201S. Aspects of Change in Prerevolutionary Russia. *Miller*
202S. The Russian Revolution. *Miller*
239S. History of Socialism and Communism. *Lerner*
262. Problems in Soviet History. *Lerner*

Polish

174. The Poles: Literature and Society, 1940-1980. *Krynski*

Political Science

165. Government and Politics of the Soviet Union. *Hough*
166. Soviet Foreign Relations. *Hough*

Russian

100. Studies in Russian Culture. (Taught in Leningrad.) *Andrews*
124. Masters of Russian Short Fiction. *Staff*
161, 162. Introduction to the Russian Novel. *Krynski*
175. Tolstoy. *Staff*
176. Dostoevsky. *Staff*
177. Introduction to the World of Chekhov. *Krynski*
185S. Introduction to Slavic Linguistics. *Andrews*
186S. History of the Russian Language. *Pugh*
196. Readings in Modern Russian. *Staff*
201, 202. Russian Novel of the Nineteenth Century. *Krynski*
225. Tolstoy. *Staff*
232. Dostoevsky. *Staff*

AREA COURSES: SOUTH ASIA

Anthropology

- 101, 102. Introduction to the Civilizations of Southern Asia. *Lawrence and staff*
- 120. South Asia: Institutions and Change. *Apte or Fox*

History

- 164. India, Pakistan, and Bangladesh: 1750 to the Present. *Richards*
- 193, 194. Introduction to the Civilizations of Southern Asia. *Lawrence and staff*
- 195S.21, 196S.21. Problems in Indian History. *Richards*
- 247. History of Modern India and Pakistan, 1707–1857. *Richards*
- 248. History of Modern India and Pakistan, 1857 to the Present. *Richards*

Interdisciplinary Courses

- 101, 102. Introduction to the Civilizations of Southern Asia. *Lawrence and staff*
- 162, 163. Introduction to Islamic Civilization. *Lawrence and staff*

Music

- 137. Music in South Asia. *Seebass and Silver*

Political Science

- 177, 178. Contemporary Social and Political Development in the Islamic World. *Braibanti*

Religion

- 140. Religions of India. *Bradley or Lawrence*
- 145. Social Issues in Contemporary Hinduism. *Robinson*
- 149. Buddha and Buddhism. *Corless*
- 160, 161. Introduction to the Civilizations of Southern Asia. *Lawrence and staff*
- 217. Islam in India. *Lawrence*
- 284. The Religion and History of Islam. *Partin*
- 287. The Scriptures of Asia. *Bradley*
- 288. Buddhist Thought and Practice. *Corless*

AREA COURSES: WESTERN EUROPE

Students may not undertake more than two courses devoted to a single European country.

Anthropology

- 123. Societies of Mediterranean Europe. *Fiedl*

Art

- 161. Nineteenth-Century European Art. *Pressly or Sund*
- 184. History of Impressionism. *Sund*

Comparative Literature

- 170. The Modern: Problems of Definition, History, and Language. *Rolleston*

Distinguished Professor Courses

- 196S. Current Political Problems in Western European and Commonwealth Countries. *Cole*

Economics

- 150. History of Economic Thought. *Goodwin or de Marchi*

French

- 107S. Contemporary Ideas. *Staff*
- 136S. Life in Eighteenth-Century France. *Stewart*
- 139. French Civilization. *Tétel*
- 166, 167. Contemporary French Life and Thought. *Staff*
- 256. Modern Literature and History. *Orr*

Germanic Language and Literature

- 127S. Contemporary Germany. *Bessent*
- 129. Deutsche Kulturgeschichte. *Staff*
- 130. German Life and Thought. *Borchardt*
- 175. Consciousness and Modern Society. *Rolleston*

History

- 105, 106. Political and Constitutional History of England. *Cell and Herrup*
- 107, 108. Social and Cultural History of England. *Cell and Herrup*
- 117. Early Modern Europe. *Neuschel*

- 135. Political, Economic, and Social History of Europe, 1890–1939. *Colton*
- 136. Europe since 1939. *Colton*
- 171. A History of Women in Europe. *Neuschel*
- 174. History of Colonial Hispanic America from Pre-Columbian Times to the Wars of Independence. *TePaske*
- 195S, 196S. Selected Seminars in European History. *Staff*
- 217S, 218S. Western Europe in the Twentieth Century. *Colton*
- 229S, 230S. Revolution in Modern Europe, 1789–1919. *Reddy*
- 231S, 232S. Problems in the History of Spain and the Spanish Empire. *TePaske*
- 253S, 254S. European Diplomatic History, 1871–1945. *W. Scott*
- 269S, 270S. British History, Seventeenth Century to the Present. *Cell*

Italian

- 139. Modern Italy. *Caserta*

Music

- 125. Masterworks of Music. *Staff*
- 156S. Music History II: Late Renaissance, Baroque. *Bartlet, Seebass, or Silbiger*
- 157S. Music History III: Rococo and Classic. *Bartlet, Bryan, Seebass, or Silbiger*
- 158S. Music History IV: Romanticism to the Early Modern Period. *Todd*

Political Science

- 115. Politics and Society in West Germany. *Kitschelt*
- 135. Political Development of Western Europe. *Lange*
- 136. Comparative Government and Politics: Western Europe. *Kitschelt or Lange*
- 225. Topics in Comparative Government and Politics: Western Europe. *Kitschelt or Lange*
- 232. Political Economy: Theory and Applications to Western Europe. *Lange*

Spanish and Portuguese

See appropriate listings under Latin America.

INTERNATIONAL RELATIONS COURSES

These courses do not fulfill requirements, but students are encouraged to take at least one as an enhancement to the major.

Anthropology

- 133. The Effects of Colonialism and Neocolonialism on Native Peoples. *Fox or Smith*

Economics

- 108. Economics of War. *Weintraub*
- 201S, 202S. Current Issues in Economics. *Davies*
- 265S. International Trade and Finance. *Brock, Kimbrough, or Tower*

History

- 128. The United States and Latin America. *Bergquist*
- 215–216. The Diplomatic History of the United States. *C. Davis*
- 253S, 254S. European Diplomatic History, 1871–1945. *W. Scott*

Interdisciplinary Courses

- 120, 120A, 120B. Perspectives on Food and Hunger. *Johns*
- 234S. Political Economy of Development: Theories of Change in the Third World. *Bergquist, Fox, Gereffi, Smith, Trouillot, and Valenzuela*

Political Science

- 93, 93D. Elements of International Relations. *Staff*
- 106. International Security. *Staff*
- 113. International Political Economy. *Grieco*
- 114. United States Foreign Policy and Latin America. *Valenzuela*
- 120. International Conflict and Violence. *Eldridge*
- 121. International Organization. *Grieco*
- 122. Modern International Politics. *Eldridge*
- 147. International Environmental Politics and Policies. *McKean*
- 148. Politics of American Business and Government in the International Economy. *Grieco*
- 157. Foreign Policy of the United States. *Holsti*
- 167. International Law. *Pye*
- 172. Political Economy of Global Natural Resources. *Johns*
- 173S. Political Economy of World Food Problems. *Johns*
- 201S. Problems in International Security. *Staff*

- 2135. Theories of International Political Economy. *Grieco*
- 2205. Problems in International Politics. *Holsti or Hough*
- 2265. Theories of International Relations. *Grieco*
- 227. International Law. *Pye*
- 2675. Policy Making in International Organizations. *Ascher*

Public Policy Studies

- 2675. Policy Making in International Organizations. *Ascher*

Sociology

- 102. America in the Modern World System. *Gereffi*
- 178. Colonialism, Neocolonialism, and Internal Colonialism. *Tiryakian*
- 204. The Dynamics of Global Interdependence. *Gereffi or Tiryakian*

THE MAJOR

Introductory Courses: A student must take an introductory course emphasizing comparative approaches from each of two departments (two courses). See the listing under Introductory Courses.

Languages and Literature: Four semester courses in a language of the area are required. A year of literature in translation or general linguistics may be substituted for the second year of a language when (1) a student, by advanced placement or otherwise, demonstrates a language proficiency equivalent to that normally achieved in two years of formal language education at Duke; or (2) a second year of a language is unavailable. The specific language courses are too numerous to list here. Area advisers should be consulted for specific approval of the language choice unless it conforms to the list below.

Africa: Swahili (first year at Duke, second year at UNC); relevant European languages such as French may be used if appropriate to specific programs.

East Asia: Chinese, Japanese.

South Asia: Hindi-Urdu.

Middle East: Arabic, Persian; or modern Hebrew for persons specializing in Israel.

Latin America: Spanish; Portuguese for those specializing in Brazil.

Russia and Eastern Europe: Russian.

Western Europe: French, German, Italian, Portuguese, Spanish.

Canada: French.

Area Courses: Four semester courses in the geographical area of special interest (the area of the language studied). The areas and courses are listed above. Others may be selected with the consent of the Director.

Concentration: A student must undertake three courses in one of the following concentrations: (a) comparative courses, examples of which are listed above; or (b) a second geographical area. Students who specialize in Western Europe or Russia must select a second concentration from a non-European area.

Seminar: Each student must take the comparative area studies senior seminar. This course allows the student to write a high-quality research paper, normally in a single semester, that reflects the cross-cultural and interdisciplinary objectives of the major. Each student will work with an adviser affiliated with the major who is an expert on the topic chosen for the paper. Some students may want to couple the paper with an independent study project done prior to or concurrently with the seminar. Any paper they have written for the course may be submitted for consideration for honors in the major.

In addition to the major requirements, students are encouraged, but not required, to: (1) take Interdisciplinary Course 109 (Contemporary International Problems) during their freshman or sophomore years; (2) enroll in the comparative methods course (Interdisciplinary Course 125) in their junior or senior year; (3) undertake at least one course from the courses in international relations listed above; (4) take at

least one course reflecting a socialist state approach to contemporary problems, from among the courses listed above under Russia, or from courses with such a perspective in one of the developing world areas; (5) develop a proficiency in more than one foreign language.

Inquiries should be addressed to the Director, Comparative Area Studies, 2122 Campus Drive.

Comparative Literature (CL)

Associate Professor Burian (classical studies), *Chairman of the Committee on Comparative Literature*; Professors Anderson (English), Jameson (comparative literature), Ryals (English), Stewart (Romance languages), Tetel (Romance languages), Tompkins (English), and Wardropper (Romance languages); Associate Professors DeNeef (English), Orr (Romance languages), Pérez (Romance languages), Rolleston (Germanic languages), Thomas (Romance languages), and Torgovnick (English); Assistant Professors Cooke (international studies), Fowler (international studies), Gaines (English), Westphal-Wihl (Germanic languages), and Willis (international studies)

The program consists of courses linking works from several national literatures through concepts of genre, period, and style; or studying literature through related intellectual structures, e.g., film, philosophy, psychoanalysis. Students contemplating a major in comparative literature should have a reading knowledge of a foreign language and a broad acquaintance with British and American authors. Students taking the major are expected to acquire a reading knowledge of a second foreign language and to familiarize themselves with methods of studying literature in a comparative manner. The program, largely interdisciplinary, is directed by a committee, and the selection of courses for the major requires the approval of the committee. Inquiries concerning eligibility and requirements should be directed to Professor Burian, 315 Carr Building.

100. Introduction to Comparative Literature. Basic structures of literature understood as fiction-making: the journey, the hero, the storyteller, the goal of community. Texts from the *Odyssey* to contemporary works, with an introduction to theoretical issues. One course. *Rolleston*

121. Introduction to Arabic and Asian Literatures. An exploration of such themes as women, war, and the West in major non-Western literary traditions. C-L: Comparative Area Studies. One course. *Cooke and Fowler*

122. The American Imagination. A syncretic approach to the literature of the Americas, North and South, drawing attention to the underlying homogeneity of New World culture. Borges, Faulkner, Garcia Marquez, Melville, Neruda, Thoreau, and others. One course. *Pérez*

123. Approaches to Arthurian Romance. Celtic and Latin background to the epic of chivalry; structure of the romance, and its transformations in France, Germany, and England during the High Middle Ages; roles of the medieval poet. C-L: Medieval and Renaissance Studies. One course. *Westphal-Wihl*

124. Continental Humanism. Readings from Boccaccio, Petrarch, Rabelais, Montaigne, Rojas, Cervantes, and Erasmus. One course. *Tetel*

125. The Romantic Impulse in the Novel. An exploration of how novels intermix realistic and romantic techniques, forms, themes, and concerns. Fictions by Emily Brontë, Stendhal, Flaubert, Dickens, Dostoevsky, Gide, Nabokov, Barth, and others. One course. *Torgovnick*

- 126. Toward the Dream Play.** Scandinavian progenitors of modern drama. Readings from Kierkegaard, Ibsen (from *Brand* to *When We Dead Awaken*), and Strindberg (pre-Inferno period, *The Dream Play*, chamber plays). One course. *Anderson*
- 128. Writings in the Pan-African Tradition.** Pan-Africanism as a political and cultural movement in this century. Political philosophies of black intellectuals (Garvey, Padmore, DuBois, James) as context for Negritude Poetry and novels from black Africa, the Caribbean, and the United States. One course. *Willis*
- 131. A New Realism.** The literary-philosophical movement (1830-1900) usually designated as realism arising subsequent to the failure of the romantic vision. One course. *Ryals*
- 132. Dada and Surrealism.** The international dada and surrealist movement in its multiple manifestations: theater, painting, novel, film, autobiography, and manifesto. Knowledge of French or German desirable. One course. *Thomas*
- 135. The Novel of the Self: East and West.** Versions of the modern self in a parallel study of Eastern (primarily Japanese) and Western (English, French, German, Russian) novels. C-L: Comparative Area Studies. One course. *Fowler*
- 138. The Politics of Private Life.** Contemporary prose works in which the most private questions become reflections on the state and society. Readings: Adorno, Christa Wolf, Blanchot, Barthes, Duras, Gramsci, Kundera, Didion, and Hawkes. One course. *Orr*
- 145. The Descent of the Epic.** Epic impulses and persistent themes in literary history: Homer, Vergil, Dante, Voltaire, Dostoevsky, T. S. Eliot, and Joyce. One course. *Torgovnick*
- 155. Comparative Perspectives on Literature and Social Change: From Plantation to City.** Representations of rural life in North America, the Caribbean, and Latin America drawn from literary texts and sociological and historical studies. Focus on the rural family as the nexus between individual relationships and the forces of history. C-L: Comparative Area Studies and Interdisciplinary Course 155. One course. *Willis*
- 159. Tragedy and the Tragic.** Sources, social role, and philosophical implications of tragedy from ancient Greece to Shakespeare and the Elizabethans, the classical French theater and modern times. One course. *Burian*
- 160. An Approach to Comedy.** Nature, purpose, and effect of comedy in the theater. Readings from the classics (Aristophanes, Plautus, Terence), the Renaissance (Machiavelli, Shakespeare, Molière, Lope de Vega), the Restoration, and the twentieth century. One course. *Wardropper*
- 169. The "Classical" Era in European Literature.** The ancients versus the moderns; the common ideals underlying the founding of modern national literary traditions between the Renaissance and the French Revolution: Jonson, Racine, Molière, Rousseau, Lessing, Schiller, Jane Austen, and others. One course. *Stewart*
- 170. The Modern: Problems of Definition, History, and Language.** Texts from about 1840 to the present studied with a view to defining "the modern" against the background of the romantic denial of transcendence and the turn to history, society, nature, and the self as sources of meaning. Baudelaire, Nietzsche, Dostoevsky, Proust, Kafka, Virginia Woolf, Borges. Other poetry and short fiction. C-L: Comparative Area Studies. One course. *Rolleston*
- 177. Film Theory.** Recent critical developments in Marxist aesthetics, structuralism, semiotics of the image, feminist film theory. Both experimental and Hollywood narrative films. C-L: Film. One course. *Gaines*

181. Marx and Freud. The twin revolutions in modern thought; *Capital* and the *Interpretation of Dreams*, explored both in their linguistic strategies and their cultural impact. Other texts by Marx and Freud; commentaries by Lukacs, Lacan, and Althusser. One course. *Jameson*

183. Theory of Modernism. Significant works of the European modern movement in music, architecture and film as well as literature. Mallarmé, Joyce, Eliot, Eisenstein, and Gustav Mahler. One course. *Jameson*

185. Psychoanalysis, Literature, and Film. Genres, styles, and schools in film and literature that attract psychoanalytic readings and raise issues of gender and sexuality: the gothic, horror, melodrama, and romance fiction; Surrealism and the avant-garde. C-L: Film. One course. *Gaines*

191, 192. Independent Study. Directed reading and research. Open only to qualified students in the junior year by consent of instructor. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research. Open only to qualified students in the senior year by consent of instructor. Two courses. *Staff*

The following courses taught in the Ph.D. program in literature are available to qualified undergraduates by permission of instructor:

251. Introduction to the Graduate Study of Literature. One course. *Pérez and staff.*

252. Criticism and Literary Theory in the Twentieth Century. One course. *Jameson, Stewart, Rolleston, Thomas, and staff*

253. Philology, Linguistics, and the Roots of Literature. One course. *Thomas and staff*

282. Structuralism, Post-Structuralism, and After. One course. *Tompkins*

COURSES CURRENTLY UNSCHEDULED

120. Theater of the Absurd

139. Perspectives on Contemporary Fiction

150. Introduction to Literary Criticism

180. Romanticism

THE MAJOR

Prerequisites. A reading knowledge of at least one foreign language; a basic survey course in English literature.

Major Requirements. (1) Comparative Literature 100; (2) two courses from those listed under Comparative Literature, or courses of literature in translation that cross national lines and invite comparative interpretation, or courses of literature written in languages that are seldom taught; (3) three courses in a single foreign literature at the 100 level or above, to be read in the original language; (4) acquisition of a second foreign language through at least the intermediate level.

This last requirement may be fulfilled by examination or by completion of such courses as the following: Greek 63, 64 or 181S, 182S; Latin 181S, 182S; German 63, 101, or 181, 182; French 63, 74, or 181, 182; Italian 63 or 181, 182; Russian 63, 64; Hindi-Urdu 63, 64; Chinese 63, 64; Japanese 63, 64.

The Committee on Comparative Literature helps students in creating a program which gives both definition and scope to their literature courses in relation to their work in other disciplines.

Computer Science (CPS)

Professor Rose, *Chairman*; Associate Professor Ramm, *Associate Chairman*; Associate Professor Biermann, *Director of Undergraduate Studies*; Professors Gallie, Loveland, Marinos, Patrick, A. Rosenberg, Starmer, Trivedi, Utku, and Woodbury; Associate Professors Ballard, Kedem, Kootsey, Loendorf, and Wagner; Assistant Professors Douglas, Dugan, and C. Smith; Adjunct Professor Skarulis; Adjunct Associate Professor Coughran; Adjunct Assistant Professors Lustig, J. Rosenberg, Rusnak, and W. Smith

The Department of Computer Science provides courses on the concepts of computing and computers, their capabilities, and uses. In most courses students make extensive use of the available computing facilities as problem-solving instruments. Students who wish to take a single introductory course, as part of their general education, usually elect Computer Science 10 or 51.

In cooperation with the Microelectronics Center of North Carolina (MCNC), the University of North Carolina at Chapel Hill, and other MCNC-affiliated universities in North Carolina, the department often sponsors advanced computer science and other high technology courses originating at other universities. These are available through a closed circuit television and data network belonging to MCNC. Contact the Department of Computer Science for further information on the availability of such courses.

10. Computer Science Fundamentals. An introduction to computers for students who do not intend to major in computer science. Fundamental concepts of the nature of computers and computability, programming, numeric and symbolic data processing. Not open to students having credit for Computer Science 51 or higher. One course. *Staff*

51. Introduction to Computing. A first course in computing for mathematically oriented students. Problem solving using a digital computer. Use of a high level algorithmic programming language. The student will be expected to write a substantial number of programs. Includes use of computer in laboratory-style classes utilizing personal computers. One course. *Kootsey and staff*

51X. Introduction to Computing. Essentially like Computer Science 51 but covering a broader range of topics in greater depth. For students with previous programming experience. One course. *Staff*

152. Data Structures. Linear lists such as stacks, queues, dequeues, circular lists, and doubly linked lists; trees; multilinked structures and their use in algorithms. Prerequisite: Computer Science 51 or equivalent. One course. *Biermann and staff*

154. Computers and Programming. Computer structure, machine language, instruction execution, addressing techniques, and digital representation of data. Computer systems organization, logic design, microprogramming, and interpreters. Symbolic coding and assembly systems; macrodefinition. Prerequisite: Computer Science 152 or consent of instructor. One course. *Ramm and staff*

155. Program Design and Construction. Substantial programs. Design specifications, choice of data structures, estimation of programming effort, stepwise development, and program-testing methodology. Programming teams and human factors in system implementation. Advanced topics in use of a procedural language and file management. Prerequisite: Computer Science 154. One course. *C. Smith and staff*

157. Introduction to Switching and Automata Theory. C-L: Electrical Engineering 157. One course. *Carroll or Strole*

174. Analysis of Algorithms. Design and analysis of efficient algorithms for sorting, searching, dynamic structure manipulation, path-finding, fast multiplication, and others; nondeterministic algorithms and computationally hard problems. Prerequisites: Computer Science 152 and four semesters of college mathematics. One course. *Loveland or A. Rosenberg*

191, 192. Independent Study. Directed reading and research for qualified juniors. Prerequisite: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research for qualified seniors. Prerequisite: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

For Seniors and Graduates

200. Programming Methodology. Practical and theoretical topics including structured programming, specification and documentation of programs, debugging and testing strategies, choice and effective use of programming languages and systems, psychology of computer programming, proof of correctness of programs, analysis of algorithms, and properties of program schemata. Prerequisite: Computer Science 152. One course. *Wagner*

201. Programming Languages. Information binding, data structures and storage, control structures, recursion, execution environments, input/output; syntax and semantics of languages; study of PL/I, Fortran, Algol, APL, LISP, SNOBOL, and SIMULA; exercises in programming. Prerequisite: Computer Science 200. One course. *Ballard or C. Smith*

202. Applied Discrete Structures. Aspects of discrete mathematics that are essential to the development of computer science. Topics from combinatorics and graph theory, discrete probability theory, and mathematical logic. Prerequisites: Mathematics 103 and 104 or equivalents. One course. *Staff*

204. Computer Network Architecture. The architecture of computer communication networks and the hardware and software required to implement the protocols that define the architecture. Basic communication theory, transmission technology, private and common carrier facilities. Addressing structures and error recovery. Multivendor software compatibility. Economic trade-offs. International standards. Prerequisites: Computer Science 154 and Electrical Engineering 157. C-L: Electrical Engineering 204. One course. *Pitt*

207. Fault-Tolerant Computer Systems. See C-L: Electrical Engineering 207. One course. *Marinos*

208. Digital Computer Design. Prerequisites: Computer Science 157 or consent of instructor. C-L: Electrical Engineering 208. One course. *Marinos*

209. Microprocessor Fundamentals and Applications. Prerequisites: Computer Science 157 and consent of instructor. C-L: Electrical Engineering 209. One course. *Marinos*

210. VLSI Systems: An Introduction. A first course in VLSI using the Mead-Conway approach. Topics include (1) the basic components of MOS technology: the transistor and gates constructed therefrom; (2) techniques for composing components into useful logic blocks: array logic, passive logic networks, sequential machines; (3) introduction to techniques for composing logic blocks into systems; and (4) introduction to software systems that aid the design process. Students will complete the design of a small system in NMOS. Prerequisite: Computer Science 157 or equivalent.

Taught at the University of North Carolina-Chapel Hill as Comp 268. One course.
Staff

215. Artificial Intelligence. Heuristic versus algorithmic methods; programming of games such as chess; theorem proving and its relation to correctness of programs; readings in simulation of cognitive processes, problem solving, semantic memory, analogy, adaptive learning. Prerequisite: Computer Science 152 or consent of instructor. One course. *Ballard, Biermann, or Loveland*

221. Numerical Analysis I. Error analysis, interpolation and spline approximation, numerical differentiation and integration, solutions of linear systems, nonlinear equations, and ordinary differential equations. Prerequisites: knowledge of an algorithmic programming language and intermediate calculus. C-L: Mathematics 221. One course. *Douglas, Gallie, or Patrick*

222. Numerical Analysis II. Calculation of eigenvalues and eigenvectors; numerical methods for solving partial differential equations and integral equations. Prerequisite: Computer Science 221 or equivalent. C-L: Mathematics 222. One course. *Douglas, Rose, or Utku*

224. Analysis of Algorithms. Design and analysis of efficient algorithms. Design techniques include recursion, divide-and-conquer, and dynamic programming. Applications include sorting, searching, dynamic structures, pathfinding, fast multiplication, fast Fourier transform. Nondeterministic algorithms. Computationally hard problems. NP-completeness. This course is the same as Computer Science 174 with more advanced-level work required of the student. Prerequisites: Computer Science 152 and four semesters of college mathematics. One course. *Loveland or A. Rosenberg*

225. Formal Languages and Theory of Computation. An introduction to the study of abstract machines and the languages they define, their capabilities, and limitations. Finite-state automata, regular languages, pushdown automata, context-free languages, Turing machines, recursive functions and recursively enumerable sets, noncomputable sets, measures of complexity for algorithms. Prerequisites: four courses in college mathematics. One course. *Loveland or A. Rosenberg*

226. Mathematical Methods for Systems Analysis I. Basic concepts and techniques used in the stochastic modeling of systems. Elements of probability, statistics, queuing theory, and simulation. Prerequisites: four courses in college mathematics. One course. *Trivedi*

227. Mathematical Methods for Systems Analysis II. Basic concepts and techniques used in the deterministic modeling of systems. Elements of linear algebra; linear, integer, dynamic, and geometric programming; and unconstrained and constrained optimization. Prerequisites: four courses in college mathematics. One course. *Trivedi*

231. Introduction to Operating Systems. Basic concepts and principles of multiprogrammed operating systems. Memory, CPU, I/O device management and scheduling. Buffering techniques. Performance evaluation. Case studies of existing systems. Prerequisite: Computer Science 154. One course. *Kedem, C. Smith, or Trivedi*

232. Compiler Construction. Models and techniques used in the design and implementation of assemblers, interpreters, and compilers. Lexical analysis, compilation of arithmetic expressions and simple statements, specifications of syntax, algorithms for syntactic analysis, code generation and optimization techniques. One course. *Wagner*

241. Data Base Methodology. Basic concepts and principles. Relational, hierarchical, and network approaches to data organization; data entry and query language

support for data base systems; theories of data organization; security and privacy issues. Prerequisites: Computer Science 154 and either 155 or equivalent. C-L: Mechanical Engineering and Materials Science 242. One course. *Starmer or Loendorf*

252. Computer Systems Organization. Hardware and software aspects. Processor, memory, device, and communication subsystems; case studies of hardware system organization, e.g., parallel, associative, fault-tolerant; organization of software systems to exploit hardware systems organization; economic and reliability aspects of various hardware organizations. Prerequisites: Computer Science 154 and 157. C-L: Electrical Engineering 252. One course. *Loendorf or Trivedi*

265. Advanced Topics in Computer Science. One course. *Staff*

276. Communication, Computation, and Memory in Biological Systems. Communication and memory in biological systems: voltage sensitive ion channels, hormone-receptor interactions, and initiation and control of RNA/DNA synthesis. Models of signaling and memory are developed and related to electronic signaling schemes. Prerequisites: Computer Science 152, two semesters of college chemistry and four semesters of college mathematics. One course. *Starmer*

THE MAJOR

For the B.S. Degree

Prerequisites. Computer Science 51; Mathematics 33 (or 31), 34 (or 32), 105 (or 103), 106 (or 104).

Major Requirements. Computer Science 152; 154; three of the following: 155, 157, 174, 201, 215, 221, 231, 232, 241, 252; and Mathematics 117 or 135. If Mathematics 135 is elected, it is strongly recommended that it be followed by Mathematics 136. Students must take enough additional courses so that they have completed at least five courses (excluding Mathematics 103, 104, 105, 106) at the 100 level or above in one department other than computer science or in an approved area. A list of areas which have been approved by the department, such as the zoology-chemistry combination often chosen by premedical students, may be obtained from the Director of Undergraduate Studies.

Students planning to do graduate work should try to include Computer Science 221 and modern algebra in their course of study. Students interested in microelectronics design should take courses in physics and chemistry.

Honors. Students who are qualified (see the section on honors in this bulletin) may undertake work leading to a degree with distinction in computer science by applying to the Director of Undergraduate Studies. Normally, candidates must have grades of A in computer science courses. They must complete a substantial project, suitably documented, or a distinguished paper on which they will be examined orally by a committee of three faculty members.

Dance

For courses in dance, see Institute of the Arts.

Distinguished Professor Courses (DPC)

Distinguished Professor Courses enable students, regardless of their majors, to study with some of the most outstanding teachers and scholars within the University. The courses ordinarily focus on topics of broad intellectual and academic interest beyond the scope of a single discipline. They may count toward the distributional requirements, and if so, the division of each is indicated at the end of the description or by the division of a cross-listed course.

195S. Wave Equations in Physics and Mathematics. Classical partial equations of mathematical physics, such as the wave equation and Maxwell's equations, that model wave phenomena. Physical reasoning leading into purely mathematical topics, such as characteristics and propagation of singularities. Prerequisite: consent of instructor. Natural Sciences. One course. *Griffiths*

196S. Current Political Problems in Western European and Commonwealth Countries. Prerequisite: consent of instructor. Social sciences. C-L: Comparative Area Studies. One course. *Cole*

198. Geologic Perspective on Development of a Barrier Island Coast. Taught on the coast of North Carolina during spring break. Natural Sciences. Half course. *Pilkey*

201. Dante's *Inferno*. A close study of the text in a bilingual edition. Attention to the historical, political, and theological aspects of the poem. Examples of use of some of the cantos by Joyce, Eliot, and Beckett. Humanities. One course. *Fowlie*

203. Proust, *Remembrance of Things Past*. In the new three-volume translation by Kilmartin. The aesthetics of the novel in terms of its structure, characters, and social classes of France. Students who know French will be encouraged to do some of the reading in French. Humanities. One course. *Fowlie*

205. The French Symbolists and T. S. Eliot. A study of the poems and theory of Baudelaire, Mallarmé, and Rimbaud. The debt of the symbolists to Poe and their influence on Eliot. Taught in English. Bilingual texts will be used. Humanities. One course. *Fowlie*

207S. Topics in Psychobiology. The biological substrates of human behavior in health and disease. Drug abuse, alcoholism, depression, schizophrenia, and human aggression. Films and videotapes. Student presentations; patient interviews. Prerequisites: senior standing and consent of instructor. Natural Sciences or Social Sciences. C-L: Psychology 207S. One course. *Brodie*

Drama (DRA)

Artist-in-Residence Ball, *Director of the Drama Program and Undergraduate Studies*; Professors Clum (drama and English), Krynski (Slavic languages), Stewart (Romance languages), and G. Williams (English); Associate Professors Alt (Germanic languages) and Burian (classical studies); Assistant Professors Gaines (English), Gopen (English), and Porter (English); Artists-in-Residence Desmond (dance), Herman, Judd, and Storer; Adjunct Professor Azenberg; Lecturer Hill; Technical Director Gaddy

The Drama Program applies with simultaneous and equivalent effort two vastly different approaches: the artistic/creative, and the scholarly/theoretical. Encouraging the investigation and application of both approaches, the program can provide a component of a liberal arts education or prepare highly-motivated students for advanced theater work with professional-level instruction. In all cases classwork is primary, but complemented and extended by an array of stage activities. Majors as well as non-majors, under professional supervision, are deeply involved in acting, directing, management, design, production, writing, dramaturgy, criticism, and research. The program—whether for the moderately interested student or the dedicated preprofessional—stresses the continual interdependence of the artistic/creative and the scholarly/theoretical in every area of theater.

INTRODUCTORY COURSES

51. Introduction to World Theater I. Relationship of the history, arts, and crafts of theater to dramatic content and society. Primitive origins to Renaissance. One course. *Clum, Hill, and staff*

52. Introduction to World Theater II. See Drama 51. Renaissance to present. Prerequisite: Drama 51. One course. *Clum, Hill, and staff*

55. Text Analysis I. Examining the script for theater applications. Half course. *Ball*

64. Drama of Greece and Rome. See C-L: Classical Studies 64. One course. *Burian*

65. Introduction to Film. Basic principles of film and film criticism through the study of works by Lumière, Méliès, Griffith, Hitchcock, Renoir, Bergman, and others. C-L: English 81 and Film. One course. *Clum or Gaines*

66. The American Film. A survey history focusing on the work of major directors and examples of important genres. C-L: English 82 and Film. One course. *Clum or Gaines*

71. Stage: Theory and Practice I. Fundamentals of scenic technology: theater space, tools and hardware, lighting equipment, and reading of plans. Laboratory. Half course. *Judd and Gaddy*

OTHER UNDERGRADUATE COURSES

101. Acting: Theory and Practice I. Fundamental concepts and performance skills; exercises, improvisations, and beginning scene study. Prerequisite: Drama 71 or consent of instructor. One course. *Staff*

102. Acting: Theory and Practice II. Continuing scene study, emphasizing analysis, character, relationship, and internal resources. Prerequisites: Drama 55, Drama 101, or consent of instructor. One course. *Staff*

103S. Acting: Theory and Practice III. Advanced scene study and audition preparation. Prerequisites: Drama 102, 155, and consent of instructor. May be taken more than once. One course. *Staff*

105. Voice and Speech. Vocal production and articulation. Phonetics, control, emotional response, projection, placement, and awareness of regionalisms. Prerequisite: Drama 101. Half course. *Staff*

107. Movement. Applied body mechanics, tension release, breath, energy flow, relaxation, emotional response, alignment, and physical articulation. Half course. *Staff*

111S. Playwriting I. Fundamentals of writing for stage and screen. Prerequisite: consent of instructor. C-L: English 107S and Film. One course. *Ball or Clum*

112S. Playwriting II. Advanced projects in writing for production. Prerequisites: Drama 111S, and 101 or 181S, and consent of instructor. C-L: Film. One course. *Ball*

115, 116. Shakespeare. See C-L: English 143, 144; also C-L: Medieval and Renaissance Studies. Two courses. *DeNeef, Gopen, Jones, Porter, Randall, or G. Williams*

117. Western Drama, Classical to Neoclassical. See C-L: English 182. One course. *Clum*

118. Western Drama from 1800 to 1914. See C-L: English 183. One course. *Clum*

119. Modern Continental Drama. See C-L: English 184. One course. *Clum*

120. Twentieth-Century American Drama. See C-L: English 162. One course. *Clum*

121. Modern British Drama. See C-L: English 133. One course. *Clum*

122. French Comedy. See C-L: French 151. One course. *Stewart*

- 123. French Drama of the Twentieth Century.** See C-L: French 162. One course.
Staff
- 124S. Drama (German).** See C-L: German 115S. One course. *Alt*
- 125. Introduction to the World of Chekhov.** See C-L: Russian 177; also C-L: Comparative Area Studies. One course. *Krynski*
- 126. Literature and the Film.** See C-L: English 188; also C-L: Film. One course.
Clum or Gaines
- 141. Production and Internship.** Practical involvement in four different areas of drama program productions, and completion of an approved summer internship or Duke Summer Drama Institute. Course requirements may be satisfied in any year, but only seniors register. Offered only on the pass/fail basis. No course credit. *Staff*
- 155. Text Analysis II.** Advanced techniques of understanding and applying the script. Prerequisite: Drama 55. Half course. *Ball*
- 161. Costumes: Theory and Practice I.** Survey of skills and techniques of design and construction. History, textiles, crafts, millinery, and aesthetics. Laboratory. One course. *Herman*
- 162. Costumes: Theory and Practice II.** Design principles applied to visualizing character and relationships. Periods and styles. One course. *Herman*
- 163. Costumes: Theory and Practice III.** Advanced applications. Prerequisite: consent of instructor. One course. *Herman*
- 164. Advanced Costume Construction.** Pattern draping, finishing, dyeing. Laboratory. Prerequisite: Drama 161 or consent of instructor. One course. *Herman*
- 165. Costume and Scene Design Rendering.** Drawing and painting fundamentals for readable renderings. One course. *Herman or Judd*
- 166. Costume History.** Relationship of clothing to culture and society from ancient Egypt to the present. One course. *Herman*
- 167. Make-Up: Theory and Practice.** Design and execution. Methods, materials, special problems, and projects. Laboratory. Half course. *Herman*
- 168. Drawing and Rendering.** Fundamentals of representational drawing using eye training methods. One course. *Herman*
- 170. Design and Color.** Applications of theory to scenery, costumes, and lighting; emphasis on graphic presentation. Laboratory. Prerequisites: Drama 71 and one of the following—Drama 168, Art 53, or consent of instructor. One course. *Judd and Herman*
- 171. Stage: Theory and Practice II.** Advanced methods and tools of scenic technology; emphasis on drafting, construction, and contemporary materials. Laboratory. Prerequisite: Drama 71. One course. *Judd and Gaddy*
- 172. Scenery: Theory and Practice I.** Application of aesthetics, skills, and theory to scenic design; emphasis on design projects. Laboratory. Prerequisite: Drama 170 or consent of instructor based on portfolio review. One course. *Judd*
- 173. Scenery: Theory and Practice II.** Advanced applications. Prerequisite: Drama 172. One course. *Judd and staff*
- 177. Lighting: Theory and Practice I.** History, fundamentals of electricity, instrumentation, and drafting light plots. Laboratory. Prerequisite: Drama 71 or consent of instructor. One course. *Judd*

178. Lighting: Theory and Practice II. Advanced application of aesthetics and technique to lighting design, emphasizing design projects. Laboratory. Prerequisites: Drama 170, Drama 177, and Drama 168 or Art 53 or consent of instructor. One course. *Judd*

181S. Directing: Theory and Practice I. History, aesthetics, and fundamental techniques of directing. Prerequisites: Drama 51, 101, and consent of instructor. One course. *Storer*

182S. Directing: Theory and Practice II. Advanced application of aesthetics, skills, and theory to performance projects. Prerequisites: Drama 155 and 181S. One course. *Storer*

185. Theater Administration. History and principles of managing the theater operation. Emphasis on development of and differences among theaters, such as community, commercial, regional, not-for-profit, and academic. One course. *Staff*

191, 192, 193, 194. Independent Study. Individual intensive research or creative projects. Prerequisite: consent of instructor. Half or one course. *Staff*

195S. Special Topics. Illustrative examples: specific writers or other theater artists, media studies, styles, mime, masks, clowns, stage fighting, newspaper criticism, studies of the profession, audition techniques, and theater periods. Prerequisite: consent of instructor. May be taken more than once. Half course. *Staff*

196S. Special Topics. Same as 195S. Prerequisite: consent of instructor. May be taken more than once. One course. *Staff*

200S. Senior Forum. Topics include: current theater issues; portfolios and auditions; future educational and career options; other areas for the advanced theater student. Prerequisites: senior drama major standing or consent of instructor. Half course. *Ball*

THE MAJOR

Prerequisites: Drama 51, 55, and 71.

Major Requirements: Drama 101, 141, 155, 161, 171, 181S, 200S, and two approved dramatic literature courses.

Optional Advanced Sequence.

Students intending to pursue graduate or professional theater work may take best advantage of the program's offerings via the following: major requirements listed above, plus Drama 52; any four and one-half additional adviser-approved drama electives; and *one* of the following three groups: group a) one approved dance course, one approved music course, and Physical Education 52; OR group b) three approved art courses; OR group c) two additional approved dramatic literature courses and one philosophy course.

Economics (ECO)

Professor Weintraub, *Chairman*; Professor Vernon, *Director of Undergraduate Studies*; Professors Clotfelter, Cook, Davies, Geweke, Gillis, Goodwin, Grabowski, Graham, Havrilesky, Kelley, Kreps, Naylor, Tower, Trembl, Wallace, and Yohe; Associate Professors de Marchi, Kimbrough, McElroy, and Tauchen; Assistant Professors Baumgardner, Brock, Marshall, Meurer, Nickerson, Shetty, Stahl, and Zarkin; Adjunct Professor Gallant; Research Professor Coats

Economics courses develop the critical and analytical skills essential for understanding economic problems and institutions, in both their contemporary and historical settings. Although no particular vocational or professional goal is emphasized,

these courses provide the academic background necessary for positions in industry, for work in many branches of government service, for law school, and for graduate study in business administration, economics, and the social sciences.

Students planning to do graduate work in economics are advised to take as many of the following courses in mathematics (listed in preferential order) as their schedules permit: Mathematics 31, 32, 103, 104, 131, 135, and 136.

1. National Income and Public Policy. Basic economic analysis emphasizing current public policy issues. Means of determining the level and rate of growth of aggregate national income and output. Causes of unemployment, inflation, and international payment problems. The effects of monetary policy (money supply and interest rates) and fiscal policy (government expenditures and taxes) on these problems. (Open only to freshmen.) One course. *Staff*

2. Competition, Monopoly, and Welfare. The composition of output and the distribution of income in a market economy. Role of government. Contemporary problems of the environment. Topics such as environmental economics, monopoly, unionism, international trade. Comparison of a market economy with other systems of economic organization. Economic problems of developing countries. (Open only to freshmen.) One course. *Staff*

1D, 2D. The same courses as Economics 1, 2 except taught as lectures with discussion sections. Two courses. *Staff*

51. National Income and Public Policy. See Economics 1. (Open to all students.) One course. *Staff*

52. Competition, Monopoly, and Welfare. See Economics 2. (Open to all students.) One course. *Staff*

51D, 52D. The same courses as Economics 51, 52 except taught as lectures with discussion sections. Two courses. *Staff*

53. Economics of Contemporary Issues. Modern economic problems, such as environmental deterioration and urban decay. The market as one of the interrelated subsystems of the social system, from institutionalist, Marxist, and other perspectives in the social sciences. One course. *Havrilesky*

108. Economics of War. Conflict theory, causes and economic consequences of war, military personnel, military-industrial complex, disarmament, and the economy. Prerequisite: Economics 52. C-L: Comparative Area Studies. One course. *Weintraub*

133. The Evolution of the American Economy. The process of industrialization and modernization in the United States from the pre-Civil War period to the present. Prerequisites: Economics 51 and 52. One course. *Coats*

138. Economic Statistics. Survey of principal concepts and methods of application to economics. (Not open to students who have had Mathematics 53 or 117, Political Science 138, Psychology 117, Public Policy Studies 112, or Sociology 133.) One course. *Marshall, McElroy, Tauchen, Wallace, or Zarkin*

139. Introduction to Econometrics. Data collection, estimation, and hypothesis testing. Use of econometric models for analysis and policy. Prerequisites: Economics 2 or 52 and Mathematics 32 or equivalent and Economics 138 or equivalent. One course. *McElroy, Marshall, Tauchen, or Wallace*

149. Microeconomic Theory. Cost and supply considerations in price theory; the demand for factors of production. The allocation of resources in the context of competitive and monopolistic market structures. Prerequisites: Economics 2 or 52 and Mathematics 31. (Not open to students who have had Public Policy Studies 110.) One course. *Graham, McElroy, Stahl, Treml, Vernon, Wallace, or Zarkin*

150. History of Economic Thought. Approaches to economic problems from Aristotle to Keynes, emphasizing certain models and doctrines—their origins, relevance, and evolution. Readings from Mun, Quesnay, Adam Smith, Malthus, Ricardo, Marx, Walras, Veblen, and Keynes. C-L: Comparative Area Studies. One course. *Goodwin or de Marchi*

153. Monetary Economics. The evolution and operations of commercial and central banking and nonbanking financial institutions in the United States, the determination of monetary aggregates and interest rates, the financial impacts of Treasury operations, and the linkages from Federal Reserve actions to price level, employment, economic growth, and balance of payments objectives. Prerequisite: Economics 154. One course. *Brock, Havrilesky, or Yohe*

154. Aggregate Economics. Concepts and measurement of national income and expenditures, employment, interest rates, and price levels; the theoretical determination of these aggregates; applications of macroeconomic theory to business cycles and economic growth. Prerequisites: Economics 1 or 51 and 2 or 52 and Mathematics 31. One course. *de Marchi, Havrilesky, Kimbrough, Nickerson, Stahl, Tauchen, Tower, or Yohe*

155. Labor Economics: Analysis and Measurement. Labor market equilibria. The demand for labor. The supply of labor: human fertility, human capital, hours of work, and labor force participation. Wage levels and differences. Union and government as labor market factors. Prerequisites: Economics 138 and 149 and Mathematics 31. One course. *Zarkin*

157S. Business Cycles and Economic Forecasting. Causes of fluctuations in economic activity and conventional methods of forecasting micro- and macroeconomic variables, using microcomputer programs. Forecasting projects by students. Prerequisites: Economics 138, 149, and 154. One course. *Yohe*

159S. State and Local Public Policy. Does not count for economics major requirements. See C-L: Public Policy Studies 159S. One course. *Luger*

160. Resource Economics and Public Policy. Microeconomic analysis of nonrenewable resources. Resource scarcity and economic interpretations of doomsday models. Rationale for government intervention into natural resource markets and the effects of governmental policies on investments, rates of extraction, and conservation. Prerequisite: Economics 149. One course. *Staff*

184. An Introduction to Canada and Canadian Issues. Does not count for economics major requirements. See C-L: Interdisciplinary Course 184; also C-L: Canadian Studies, Comparative Area Studies, History 184, Political Science 184, and Sociology 184. One course. *Leach*

187. Public Finance. Economic aspects of such problems as the growth of government, the proper role of the state, the centralization and decentralization of government, government bureaucracy, the impact of taxes and spending on the wealthy and the poor, other public policies and questions. One course. *Davies*

189. Business and Government. Public policies which most directly affect the operation of competition in the business world. The economic basis for an evaluation of antitrust policy, public utility regulation, and public enterprise. Prerequisites: Economics 138 and 149, or consent of instructor. One course. *Grabowski or Vernon*

191, 192. Independent Study. Directed reading and research. Prerequisite: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Same as Economics 191, 192, but for seniors. Two courses. *Staff*

For Advanced Undergraduates and Graduates

204S. Advanced Monetary Economics. Monetary theory and its statistical and institutional implementation. Particular attention to the development of aggregative theories of prices, interest rates, and production; the functioning of monetary policy within various theoretical frameworks; appraisal of recent use and limitations of Federal Reserve policy. Prerequisite: Economics 153. One course. *Havrilesky or Yohe*

205S. Advanced Monetary Theory and Policy. Emphasis on recent issues: innovations in the payments mechanism and new monetary aggregates, the subterranean economy, financial crises, alternative views of the monetary policy transmission mechanism, and the monetarist-fiscalist controversy. Prerequisite: Economics 153. One course. *Havrilesky or Yohe*

212S. Economic Science and Economic Policy. A historical examination of the impact of economics on public policy; topics vary each semester and have included energy and anti-inflation policy, productivity growth, the Third World, and the Council of Economic Advisers. One course. *Goodwin*

218. Macroeconomic Policy. Does not count for economics major requirements. See C-L: Public Policy Studies 218. One course. *Luger*

219S. Economic Problems of Underdeveloped Areas. Analysis of underdeveloped countries with some attention to national and international programs designed to accelerate development. Prerequisite: Economics 149 or consent of instructor. C-L: Comparative Area Studies. One course. *Kelley or Naylor*

232. Analytical Methods IV: Topics in Economic Policy. Does not count for economics major requirements. See C-L: Public Policy Studies 232. One course. *Gillis*

233. Federal, State, and Local Finance and Economic Policies. Analysis of expenditures, taxation, debt, public enterprises, and current government programs. Prerequisite: Economics 149 or consent of instructor. One course. *Davies*

234. Urban and Regional Economics. Presents models to analyze metropolitan systems and the location of economic activity; to understand the causes of selected urban and regional problems, including unbalanced growth and development, poor housing conditions, residential segregation, deteriorating services, and fiscal crises; and to assess the impact of public policies toward states and substate areas. Prerequisite: Economics 149 or consent of instructor. One course. *Clotfelter or Luger*

237. Statistical Methods. Methods of dealing with problems in business and social science. Simple, multiple, partial, and curvilinear correlation; curve fitting; probability; sampling distributions; and statistical inference. Prerequisite: Economics 138 or consent of instructor. *McElroy*

243. Econometrics I. Economic theory, mathematics, statistical inference, and electronic computers applied to analysis of economic phenomena. Objective is to give empirical content to economic theory. Matrix algebra used to develop topics in inference, linear regression, and systems of simultaneous equations. Use is made of the electronic computer. Prerequisites: Economics 149 and 237 or equivalents. One course. *Marshall or Wallace*

244. Corporate Economics I. Strategic planning models of the firm including marginal analysis, mathematical programming, portfolio, and corporate simulation models. Economics as the language of corporate planning and modeling. Prerequisites: Economics 138 and 149 or equivalents. One course. *Naylor*

245. Econometrics II. Advanced theory and applications: includes specification error, generalized least squares, lag structures, Bayesian decision making, simulta-

neous equation methods, and forecasting. Emphasis on current applied literature. Prerequisite: Economics 243. One course. *Geweke, McElroy, Tauchen, or Wallace*

246. Selected Topics in Econometric Theory. Analysis of panel data, combining data from different sources, vector autoregressive methods, problems of causation in time series data, nonlinear estimation, limited dependent variables, sample selection bias, and other topics to be chosen subject to the interests of the class. One course. *Geweke, Tauchen, or Wallace*

247S. Applied Econometrics. Application of current developments in econometric methodology to empirical problems in economics. Emphasis on the conduct of empirical research, including model and hypothesis formulation, testing, and integration of economic and econometric theory. One course. *Geweke, Marshall, McElroy, Tauchen, or Wallace*

250S. Modern Economic Thought. Major streams of economic analysis since 1936. Selected topics from the economics of Keynes, its offshoots and coordinate developments in monetary and equilibrium theory; post-Marxian economic theory. Historical evolution of recent ideas and their interrelations. Prerequisites: Economics 138 and 149 and 154 or consent of the instructor. One course. *de Marchi or Weintraub*

265S. International Trade and Finance. Fundamental principles of international economic relations. The economic basis for international specialization and trade and the economic gains from trade, the balance of international payments, problems of international finance, investments, and monetary problems. Prerequisites: Economics 149 and 154. C-L: Canadian Studies and Comparative Area Studies. One course. *Brock, Kimbrough, or Tower*

268. Federal Tax Policy. Does not count for economics major requirements. See C-L: Public Policy Studies 268; also C-L: Law 518. One course. *Clotfelter or Schmalbeck*

286S. Economic Policy Making in Developing Countries. Does not count for economics major requirements. See C-L: Public Policy Studies 286S; also C-L: Comparative Area Studies. One course. *Gillis*

293. Soviet Economic History. Establishment of foundations of a socialist economy: collectivization, industrialization, and search for economic efficiency. C-L: Comparative Area Studies. One course. *Trenl*

294S. Soviet Economic System. Economic planning and administration in the Soviet Union and other socialist countries. International comparisons. Theoretical and applied problems of resource allocation, economic development, and optimal micro decision making in a nonmarket economy. C-L: Comparative Area Studies. One course. *Trenl*

Honors Seminars (by invitation only)

201S, 202S. Current Issues in Economics. Economic analysis of such issues as the health care system, crime and punishment, pollution and the environment, the performing arts, welfare, and the energy crisis. Prerequisites: For 201S: 138 and 149 and, for Economics 202S: Economics 201S. C-L: Comparative Area Studies. Two courses. *Davies*

206S. Regulation and Industrial Economics. Analysis of industrial competition and performance in industries such as automobiles, steel, agriculture, airlines, pharmaceuticals, computers, and cable TV. Analysis of the efficiency of regulation and other public policy programs. Prerequisites: Economics 138 and 149. One course. *Grabowski*

207S. Conflict and Cooperation in Economics. Elements of game theory. Cooperative and noncooperative games with reference to trading, general equilibrium theory, oligopoly, and monopoly. Prerequisites: Economics 149 and Mathematics 103. One course. *Weintraub*

208S. Economics of Labor Supply and the Family. Supply of labor and returns to human capital over the life cycle; demand for labor and discrimination; sex and race differences in wage rates, hours of work earnings, occupation, and unemployment; specialization, conflict and cooperation, and the allocation of goods and leisure within a family; marriage and divorce; and fertility. Prerequisites: Economics 138 and 149; Economics 139 is recommended. One course. *McElroy*

209S. Economics of Population. Relationship of population growth to economic development and to natural resource and environmental pressures. Causes and impacts of population change, including economic models of fertility, mortality, marriage, and migration. Prerequisites: Economics 149 and 154. One course. *Kelley*

213S. Economics of Slavery in the American South. The nature, development, and economic and social consequences of slavery in the United States during the nineteenth century. Prerequisites: Economics 149 and consent of instructor. C-L: Afro-American Studies 213S. One course. *Coats*

224S, 225S. Economics of the Law. Methods of economic analysis with applications to legal issues; elementary exposition of the mathematics of constrained optimization. Prerequisites: Economics 138 and 149; for 225S: 224S. Two courses. *Graham*

COURSES CURRENTLY UNSCHEDULED

132. Introduction to Economic History

198S. Economics of Regulation

200. Capitalism and Socialism

203S. Mathematical Economics

211S. Current Problems in Aggregate Supply

235. The Economics of Crime

285. Evaluation of Public Expenditures

THE MAJOR

For freshmen matriculating in the fall 1986 semester, and thereafter:

Prerequisites. Mathematics 31, Economics 1 or 51, and Economics 2 or 52, and an approved statistics course. (Statistics courses currently acceptable include Economics 138, Mathematics 53 and 117, and Public Policy Studies 112.)

Major Requirements. Economics 149, 154, and any three additional 100- or 200-level courses, not including Economics 138. Substitution of similar courses in other departments for courses in the economics department will not be permitted.

For all students matriculating before the fall 1986 semester:

Prerequisites. Mathematics 31, Economics 1 or 51, and Economics 2 or 52.

Major Requirements. Economics 149, 154, and any three additional 100- or 200-level economics courses. Substitution of similar courses in other departments for courses in the economics department will not be permitted.

Honors. For graduation with distinction at least one honors seminar and an honors paper are required. Prerequisites for admission to an honors seminar are two of the following courses: Economics 149, 154, and an approved statistics course. See the section on honors in this bulletin.

Education (EDU)

Associate Professor Davis, *Chairman and Director of Undergraduate Studies*; Professor Page; Associate Professors Ballantyne, Carbone, Di Bona, Johnson, and Sawyer; Adjunct Professor Eilber; Adjunct Associate Professors Martin and Pittillo; Part-time Instructors Malone and Peete; Lecturers Fowler and Leach

Students who desire an understanding of the study of education as part of their liberal arts program should elect courses in accordance with their special interests. Selected courses in education may satisfy distribution requirements in the division of the social sciences. Students who expect to teach should confer with the Director of Undergraduate Studies or other advisers in the program prior to registration each semester. Students interested in certification to teach in secondary schools should consult with Professors Carbone or Davis.

100. Social and Philosophical Foundations of Education. Basic features and assumptions, viewpoints, and issues of education in contemporary America. One course. *Di Bona*

103S. American Educational Theory. A study of contemporary issues and problems. One course. *Carbone*

117S. Psychology of Personal and Social Adjustment. Principles of mental health affecting individual and social adjustments. One course. *Staff*

118. Educational Psychology. Emotional and cognitive learning in children, youth, and adults. One course. *Ballantyne, Davis, or Page*

121. Infancy, Early Childhood, and Educational Programs. Developmental theories and their practical application in education. Emphasis on parenting and teaching. One course. *Staff*

139. Marxism and Society. Core Course for the Program in Perspectives on Marxism and Society. See C-L: Anthropology 139; also C-L: History 186, Interdisciplinary Course 139, and Sociology 139. One course. *Zagarell and staff*

140. The Psychology of Work. Factors affecting career choice and change. One course. *Ballantyne*

149S. Exceptional Children. Etiology and assessment of major types of exceptionalities, including intellectual abilities, physical or emotional handicaps, and sensorially impaired. Family relationships and treatment programs. One course. *Davis*

155. Tests and Measurements. Measurement of abilities, personality, and achievement. Tests and other instruments for evaluating individual and program performance. One course. *Page*

168S. Contemporary Education Criticism. One course. *Carbone or Di Bona*

189. The Teaching of Composition, Grammar, and Literature in Secondary School. C-L: English 118. One course. *Page*

191, 192. Independent Study. Directed reading and research for juniors. Prerequisite: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research for seniors. Prerequisite: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

For Seniors and Graduates

205, 206. Selected Topics. Two courses. *Staff*

211. Education and the Mass Media. Impact of mass media on behavior, particularly of children. One course. *Di Bona*

212S. Pedagogy and Political Economy: A World View. The relationships of employment, schooling, and government policy. Concepts of social class, ideology, and hegemony used to analyze past and present developments. Selected national systems (such as those of Japan, India, and the U.S.S.R.) compared to American educational practices from Marxist and liberal perspectives. One course. *Di Bona*

215S. Seminar in Secondary School Teaching. Principles, practices, and problems in secondary school instruction. One course. *Carbone or staff*

216. Secondary Education: Internship. Supervised internship in senior high schools, involving some full-time teaching. Prerequisite: C average overall and in teaching field or fields. Two courses. *Carbone or staff*

225. Teaching of History and the Social Studies. Evaluation of the objectives, content, materials, and methods in the teaching of history and the social studies. One course. *Carbone or staff*

232. Psycho-educational Counseling with Families. Individual and group counseling concerning psycho-educational problems of families. Prerequisite: consent of instructor. One course. *Ballantyne or Davis*

236. Teaching Developmental and Remedial Reading in the Secondary School. Principles, methods, and materials for the development of effective reading attitudes and skills in developmental and remedial programs. One course. *Staff*

242. Group Counseling. Theories and techniques of counseling for small groups of children, adolescents, teachers, parents, and other adults. Prerequisite: consent of instructor. One course. *Ballantyne*

246. Teaching of Mathematics. Aims, curriculum, and classroom procedure for teaching secondary school mathematics. One course. *Staff*

276. The Teaching of High School Science. Discussion, lectures, and collateral reading related to such topics as aims, tests, curriculum, classroom and laboratory procedures, field trips, and course and lesson planning for secondary school science. One course. *Staff*

COURSES CURRENTLY UNSCHEDULED

170. The Undergraduate Curriculum

171T, 172T. Junior-Senior Tutorials

173, 174. Clinical Reading Practicum

227. Contemporary Theories of Counseling and Psychotherapy

248. Practicum in Counseling

UNIVERSITY PROGRAM FOR PREPARATION FOR TEACHING*

Duke University offers programs to prepare students to meet certification requirements for teaching in secondary schools, although no major is offered in education. Prerequisites for all prospective teachers are Psychology 11 and Education 100 or 103S. Special materials and methods courses should be taken in the education program and other appropriate departments prior to undergraduate student teaching, which is part of a planned professional semester in the senior year. Only students with a C average or higher overall and in the major and teaching fields will be admitted to student teaching.

*Duke University is accredited by the North Carolina Department of Public Education and has reciprocal approval for initial certification with most of the fifty states.

Secondary School Teaching

Prospective secondary school teachers must major in a subject other than education. They are advised to consult the appropriate adviser in education prior to each registration period to assure that they will be eligible to enter the required student teaching program. Students preparing to teach in a secondary school must meet certification requirements by qualifying in one teaching field. Qualifications for certification to teach a single science may be sought under either the Bachelor of Arts or the Bachelor of Science degree.

English (ENG)

Professor G. Williams, *Chairman*; Professor Strandberg, *Director of Undergraduate Studies*; Assistant Professor Gopen, *Supervisor of Freshman Instruction and Director of University Writing Program*; Professors Anderson, Budd, Cady, Duffey, Ferguson, Fish, Gleckner, Jackson, Lentricchia, Monsman, Nygard, Price, Randall, Ryals, Smith, Tompkins, and K. Williams; Associate Professors Applewhite, Butters, Clum, DeNeef, Gerber, Jones, Mellown, Pope, and Torgovnick; Assistant Professors Gaines and Porter; Adjunct Associate Professor Ball; Lecturer Wittig

WRITING AND LANGUAGE

For courses in composition see below and also University Writing Courses 4, 5, 6, and 7 in the University Writing Program section of this bulletin.

3. Introductory Composition and Literature. A skills course in composition and literature (contemporary essays and short stories), with frequent writing assignments; regular individual conferences. (This course, offered in the Summer Transitional Program, does not satisfy the requirement for proficiency in writing.) One course. *Staff*

28S. Introduction to Creative Writing. Prerequisite: consent of instructor. One course. *Staff*

29. This number represents one course credit for advanced placement on the basis of the College Board examination in Composition and Language.

61S. Writing: Prose Fiction and Drama. Prerequisite: consent of instructor. One course. *Staff*

62S. Writing: Poetry. Prerequisite: consent of instructor. One course. *Staff*

101S. Advanced Expository Writing. Techniques of effective writing. One course. *Staff*

103S, 104S. Writing: Short Stories. Class discussion of students' manuscripts; individual conferences with the instructor. Open to sophomores, juniors, and seniors. Prerequisite: consent of instructor. Two courses. *Applewhite, Pope, Porter, or Price*

105S. Writing: Longer Prose Narrative. The writing of a novel or novella or a group of short stories. Primarily for juniors and seniors. Prerequisite: consent of instructor. One course. *Price*

106S. The Writing of Poetry. Meter, image, tone, and dramatic organization in traditional and modern poems as a basis for original composition. Prerequisite: consent of instructor. One course. *Applewhite or Pope*

107S. Playwriting I. Fundamentals of writing for stage and screen. Prerequisite: consent of instructor. C-L: Drama 111S and Film. One course. *Ball or Clum*

109S. Special Topics in Writing. Advanced work for majors who have taken at least two previous 100-level writing courses. Prerequisite: consent of instructor. One course. *Staff*

111. Introduction to Linguistics. C-L: Anthropology 107, Interdisciplinary Course 111, and Linguistics. One course. *Staff*

112. English Historical Linguistics. Introduction to methods and principles of historical linguistics, as exemplified by the history of the English language from Proto-Indo-European to the present. C-L: Linguistics. One course. *Butters or Nygard*

115. Present-Day English. Origins, development, and current structure of English, especially in America. Transformational versus traditional and structural grammar, written versus spoken English, social and regional dialects. C-L: Linguistics. One course. *Butters or Nygard*

118. The Teaching of Composition, Grammar, and Literature in Secondary School. Prospects and challenges of teaching English in America. Goals, content, and methods. Visits to public and private English classes; discussions with successful teachers; evaluation of written work and other performance. C-L: Education 189. One course. *E. Page (Education)*

119. Current Topics in Linguistics. C-L: Anthropology 112, Interdisciplinary Course 119, and Linguistics. One course. *Staff*

For Juniors, Seniors, and Graduates

208. History of the English Language. Introductory survey of the changes in sounds, forms, and vocabulary of the English language from its beginning to the present, with emphasis on the evolution of the language as a medium of literary expression. C-L: Linguistics and Medieval and Renaissance Studies. One course. *Butters or Nygard*

209. Present-Day English. A survey of contemporary linguistic theories applied to modern English; designed for students of literature and teachers of English. C-L: Linguistics. One course. *Butters or Nygard*

See also Institute of the Arts in this bulletin.

INTRODUCTION TO LITERATURE

20. This number represents one course credit for advanced placement on the basis of the College Board examination in Literature and Composition.

21S. Studies in the Novel. One course.

22S. Studies in Drama. One course.

23S. Studies in the Short Story. One course.

24S. Studies in Poetry. One course.

25S. Studies in the Epic. One course.

26S. Studies in Special Topics. May be taken twice. One course.

49S. Innovative Freshman Seminar. Topics vary each semester offered. One course. *Staff*

51, 52. Representative American Writers. Selections and complete works. 51: Poe, Emerson or Thoreau, Hawthorne, Melville, Whitman, Dickinson, and Twain; not open to students who have taken English 152 or 153. 52: James, Frost or Robinson,

Crane or Dreiser, O'Neill, Faulkner, Hemingway, and others. Not open to students who have taken English 153 or 154. Two courses. *Staff*

91. Introduction to the Study of English Literature. Methods of literary analysis through the study of selected works of Chaucer, Shakespeare, Pope, and Wordsworth. Not open to students who have taken English 55 or 56. One course. *Staff*

93. Introduction to the Study of Literary Genre. An introduction, through selected poetry, fiction, and drama, to the distinctive nature of each major genre and to the critical procedures for examining that genre. One course. *Staff*

ENGLISH AND BRITISH LITERATURE

121. Medieval English Literature to 1500. The principal forms and examples of English prose, poetry, and drama of the Anglo-Saxon and Middle English periods (excluding Chaucer). In translation. C-L: Medieval and Renaissance Studies. One course. *Nygard*

122. Sixteenth-Century English Literature. Emphasis in poetry on Wyatt, Sidney, Spenser, Raleigh, Shakespeare; in prose on Sidney and Sir Thomas More; in drama on Marlowe. C-L: Medieval and Renaissance Studies. One course. *DeNeef or Fish*

123. English Literature: 1600 to 1660. Emphasis in poetry on Jonson and the cavaliers, Donne and the metaphysicals; in drama on Jonson, Tourneur, Webster, Ford; in prose on character writers, Bacon, Burton, Donne, Browne. C-L: Medieval and Renaissance Studies. One course. *DeNeef, Fish, or Randall*

124. English Literature: 1660 to 1800. Major genres and authors such as Dryden, Congreve, Addison, Swift, Pope, Gray, Johnson, Blake, and Defoe or Fielding. One course. *Ferguson or Jackson*

125. English Literature of the Romantic Period. Wordsworth, Coleridge, Byron, Shelley, and Keats. One course. *Applewhite, Gleckner, or Jackson*

126. English Literature: 1832 to 1900. Major writers and genres, with special emphasis on Carlyle, Tennyson, Browning, Arnold, the pre-Raphaelites, and Hopkins. Collateral reading from novels. One course. *Monsman or Ryals*

127, 128. Twentieth-Century British Literature. Emphasis on principal writers of fiction, drama, and poetry. 127: usually Conrad, Shaw, Yeats, Wells, Synge, Forster, Woolf, and Joyce. 128: usually Lawrence, Cary, Huxley, Auden, Greene, Beckett, and Dylan Thomas. Two courses. *Mellown, Pope, or Smith*

131. Studies in a Single British Author. One course. *Staff*

133. Modern British Drama. O'Casey, Coward, Eliot, Osborne, Pinter, Beckett, Stoppard, and others. C-L: Drama 121. One course. *Clum*

135. British Poetry of the Twentieth Century. Changes in poetry and its criticism from the Edwardians. Yeats, Housman, Lawrence, Owen, the Sitwells, Graves, Auden, MacNeice, Dylan Thomas, Hughes, and Larkin. One course. *Mellown, Pope, or Smith*

136. Eighteenth-Century British Novel. Defoe, Richardson, Fielding, Smollett, and Sterne; the Gothic novel. One course. *Ferguson or Jackson*

137. Nineteenth-Century British Novel. Scott, Austen, Dickens, Thackeray, Trollope, the Brontës, George Eliot, Meredith, Butler, Hardy, and others. One course. *Monsman or Ryals*

138. Twentieth-Century British Novel. Conrad, Lawrence, Forster, Joyce, Woolf, Huxley, Cary, Amis, and Golding. One course. *Mellown, Pope, or Smith*

139S. Special Topics in British Literature. One course. *Staff*

Major Authors

141. Chaucer. Focus on *The Canterbury Tales* and its literary and social background. C-L: Medieval and Renaissance Studies. One course. *DeNeef or Nygard*

143, 144. Shakespeare. 143: twelve plays before 1600. 144: usually ten plays after 1600. C-L: Drama 115, 116 and Medieval and Renaissance Studies. Two courses. *DeNeef, Gopen, Jackson, Jones, Porter, Randall, or G. Williams*

145. Milton. Poetry and its literary and social background. C-L: Medieval and Renaissance Studies. One course. *Fish or Price*

For Juniors, Seniors, and Graduates

212. Middle English Literature: 1100 to 1500. Selected topics. C-L: Medieval and Renaissance Studies. One course. *Nygard*

221. Renaissance Prose and Poetry: 1500 to 1660. Selected topics. C-L: Medieval and Renaissance Studies. One course. *DeNeef, Fish, Randall, or G. Williams*

225. Renaissance Drama: 1500 to 1642. Selected topics. C-L: Medieval and Renaissance Studies. One course. *Randall*

235. Restoration and Eighteenth-Century Literature: 1660 to 1800. Selected topics. One course. *Ferguson or Jackson*

241. Romantic Literature: 1790 to 1830. Selected topics. One course. *Gleckner, Jackson, or Monsman*

245. Victorian Literature: 1830 to 1900. Selected topics. One course. *Monsman or Ryals*

251. British Literature since 1900. Selected topics. One course. *Mellown or Smith*

AMERICAN LITERATURE

151. American Literature to 1820. Colonial authors such as Bradford, Taylor, Cotton Mather, Edwards, Byrd, and Franklin, and authors of the early Republic such as Tyler, Freneau, and C. B. Brown. One course. *Jones*

152. American Literature: 1820 to 1860. Prose and poetry of American romanticism: Emerson, Thoreau, Hawthorne, Poe, Melville, and Whitman. (Not open to students who have taken English 51.) One course. *Anderson, Cady, Gerber, Jones, Tompkins, or K. Williams*

153. American Literature: 1860 to 1915. Dickinson, Twain, James, the social and philosophical essayists, Crane, Dreiser, Robinson, and Frost. (Not open to students who have taken English 52.) One course. *Anderson, Budd, Cady, Gerber, Jones, or K. Williams*

154. American Literature: 1915 to 1960. Eliot, Fitzgerald, Hemingway, Faulkner, and others. (Not open to students who have taken English 52.) One course. *Duffey, Pope, Lentricchia, or Strandberg*

155. Contemporary American Writers. Novelists and poets prominent since 1960. One course. *Chum, Duffey, or Strandberg*

157, 158. American Literature and Culture. Relationship of literature to the other arts, American intellectual history, religion, and science and technology. 157: to the Civil War. 158: from the Civil War to 1960. Two courses. *Cady*

161. Studies in a Single American Author. One course. *Staff*

162. Twentieth-Century American Drama. Representative plays by O'Neill, Odets, Williams, Miller, Albee, Lanford Wilson, and others. C-L: Drama 120. One course. *Clum*

163. Twentieth-Century American Poetry. The classicism of Pound, Eliot, and the Fugitives in relation to the neoromanticism of Stevens, Williams, Crane, and Roethke. Developments during World War II and after: Lowell, Jarrell, Berryman, Dickey, Lev-ertov, and Wright. One course. *Applewhite, Duffey, or Pope*

164, 165. American Fiction. A survey of the novel and the short story. 164: the nineteenth century; Poe, Hawthorne, Melville, Twain, James, and others. 165: the twentieth century; Hemingway, Faulkner, Fitzgerald, Barth, Pynchon, and others. Two courses. *Clum, Strandberg, or K. Williams*

167, 168. Afro-American Literature. 167: oral and written literary traditions from the American colonial period into the nineteenth century, including the spiritual as lyric poetry and the slave narrative as autobiography. 168: the late nineteenth and the twentieth centuries, Paul Laurence Dunbar to Cyrus Colter. C-L: Afro-American Stud-ies 173, 174. Two courses. *K. Williams*

169S. Special Topics in American Literature. One course. *Staff*

For Juniors, Seniors, and Graduates

263. American Literature to 1865. Selected topics. One course. *Anderson, Jones, or Tompkins*

267. American Literature: 1865 to 1915. Selected topics. One course. *Budd, Cady, or K. Williams*

269. American Women Writers. Selected topics. One course. *Tompkins*

275. American Literature since 1915. Selected topics. One course. *Duffey, Lentricchia, or Strandberg*

GENRE AND WORLD LITERATURE

170. Theory of Genre. Introduction to literary genre and the critical questions raised about literature when examined from a generic perspective. One course. *DeNeef, Jackson, or Torgovnick*

171. Studies in a Genre. One course. *Staff*

173. Legend and Literature. Classical, Celtic, and/or Germanic legends and their places in later literature. Special attention to monsters in literature and to Arthurian material. One course. *Torgovnick*

176. Introduction to Folklore. A survey of the materials of oral tradition (folktale, legend, myth, and related forms) and the methods of investigation in the field. One course. *Nygard*

177. Ballad and Folksong. Orally transmitted song traditions, British and Amer-ican. One course. *Nygard*

178. Literature and the Other Arts. Selected topics in the study of the interrelation of literature and other art forms, such as music and painting. One course. *Staff*

179S. Special Topics in a Literary Genre. Half course (summer only) or one course. *Staff*

182. Western Drama, Classical to Neoclassical. Continental and British theater and drama from the fifth century B.C. to A.D. 1800: Aeschylus to Racine. C-L: Drama 117 and Medieval and Renaissance Studies. One course. *Clum*

183. Western Drama from 1800 to 1914. Continental, British, and American drama. Wilde, Shaw, Ibsen, Chekhov, Strindberg, Herne, Moody, and others. C-L: Drama 118. One course. *Clum*

184. Modern Continental Drama. Kaiser, Brecht, Sartre, Genet, Pirandello, Ionesco, and others. C-L: Drama 119. One course. *Staff*

186. Canadian Literature in English. Eighteenth century to the present. Emphasis on the twentieth century and on novels by Hugh MacLennan, Margaret Laurence, Mordecai Richler, Margaret Atwood, Rudy Wiebl, and others. C-L: Canadian Studies and Comparative Area Studies. One course. *Staff*

For Juniors, Seniors, and Graduates

281. Studies in a Genre: The Novel. Examination of major issues, approaches, and trends in the history, criticism, and theory of the novel. One course. *Torgovnick*

CRITICISM

For Juniors, Seniors, and Graduates

287. Major Critical Thought. A study of major figures in the history of literary criticism. One course. *Duffey, Fish, Lentricchia, or Tompkins*

INDEPENDENT STUDY

191, 192, 193, 194. Independent Study. Directed reading and research. Students should consult the Director of Undergraduate Studies as early as possible in the preceding term. One course each. *Staff*

195T. Tutorial. Directed reading and research. Students should consult the Director of Undergraduate Studies as early as possible in the preceding term. One course. *Staff*

196, 197, 198. Honors Program Sequence. See *Honors* under THE MAJOR. Three courses. *Staff*

SPEECH AND FILM

71. Essentials of Public Speaking. Designed to give the student practice in making oral presentations with particular attention to the gathering and organization of speech materials. Primarily for freshmen and sophomores. One course. *Staff*

72. Essentials of Public Speaking. Similar to English 71, but primarily for juniors and seniors. Not open to students who have taken English 71. One course. *Staff*

73S. Argumentation. Analysis, investigation, evidence, reasoning, brief making, and refutation. Class debates. Prerequisite: consent of instructor. One course. *Staff*

81. Introduction to Film. See C-L: Drama 65; also C-L: Film. Half course (summer only) or one course. *Clum or Gaines*

82. The American Film. See C-L: Drama 66; also C-L: Film. One course. *Clum or Gaines*

188. Literature and the Film. Film versions of novels, short stories, and plays including *Wuthering Heights*, "The Swimmer," *The Trial*, *Who's Afraid of Virginia Woolf*. C-L: Drama 126 and Film. One course. *Clum or Gaines*

189S. Special Topics in Film. A major genre, period, or director. Prerequisite: English 81. C-L: Film. One course. *Clum or Gaines*

RELATED TOPICS

27S. Studies in Nonliterary Topics. May be taken twice. *Staff*

COURSES CURRENTLY UNSCHEDULED

12. Intermediate Composition

74. Persuasive Speaking

98. College Sports and American Culture

175. The Bible as Literature

181S. Studies in a Single World Author

185. Major Western Authors

187. Readings in European Literature

THE MAJOR

Basic Requirements. English 91 or 93.

Major Requirements. Eight courses on or above the 100 level, to be organized into one of the coherent plans of study listed below. Each plan of study contains an appropriate seminar and one course in each of four areas: (1) in a major author; (2) in English or British literature before 1800; (3) in English or British literature after 1800; and (4) in American literature. The period requirements may also be satisfied by pertinent courses in a literary genre.

1. *English Literature:* four courses in English or British literature to include at least one course before 1800 and one course after 1800; one course in American literature; one course in a major author (Chaucer, Shakespeare, or Milton); one seminar in English or British literature; and one elective.*
2. *American Literature:* four courses in American literature, including a seminar; one course in English or British literature before 1800; one course in English or British literature after 1800; one course in a major author (Chaucer, Shakespeare, or Milton); and one elective.*
3. *Studies in Literary Genre:* three courses in literary genre, including a seminar; one course in English or British literature before 1800; one course in English or British literature after 1800; one course in American literature; one course in a major author (Chaucer, Shakespeare, or Milton); and one elective.* English/drama double majors should take Studies in a Literary Genre with drama as their concentration.
4. *Writing:* four courses in writing; one course in English or British literature before 1800; one course in English or British literature after 1800; one course in American literature; and one course in a major author (Chaucer, Shakespeare, or Milton).

Courses which fulfill area requirements:

English or British literature before 1800: 121, 122, 123, 124, 131 (when before 1800), 136, 139S (when before 1800), 141, 143, 144, 145, 212, 221, 225, 235.

English or British literature after 1800: 125, 126, 127, 128, 131 (when after 1800), 133, 135, 137, 138, 139S (when after 1800), 241, 245, 251.

*English 112 and 115 are recommended supplements to the major's plan of study.

American literature: 151, 152, 153, 154, 155, 157, 158, 161, 162, 163, 164, 165, 167, 168, 169S, 263, 267, 275.

Studies in a Major Author: 141, 143, 144, 145.

Literary Genre: 131 (when appropriate), 133, 135, 136, 137, 138, 139S (when appropriate), 141, 143, 144, 145, 161 (when appropriate), 162, 163, 164, 165, 169S (when appropriate), 170, 171, 173, 174, 175, 176, 177, 178, 179S, 181S (when appropriate), 182, 183, 184, 225.

Writing: 101S, 103S, 104S, 105S, 106S, 107S, 109S.

Foreign Languages. The department recommends that students majoring in English complete at least two years of college-level study, or the equivalent, of a foreign language. Students contemplating graduate work in English should note that many master's programs require examination in one foreign language and that doctoral programs commonly require examination in two.

Teacher Certification. Majors seeking certification to teach English in the secondary schools should select the major plan in American literature and choose Shakespeare as their major author as these emphases correspond to the standard certification requirements of most public school systems. Such prospective teachers should confer also with the appropriate adviser in the Program in Education as soon as possible in their undergraduate careers.

Honors. The department offers a program leading to graduation with distinction consisting of a three-semester sequence of study in literature, literary criticism, and literary theory (English 196, 197, and 198), requiring short papers weekly, term papers for 196 and 197, and a senior thesis for 198. Prerequisites: three courses in English with at least a B+ average, and a written recommendation from an English instructor (in courses other than composition). To obtain honors in English, a student must satisfactorily complete all three semesters. Course credit for individual semesters (but not honors) will be given upon satisfactory completion of fewer than the full three semesters. Students wishing to pursue honors must apply to the Department Honors Committee for admission to the program by October 1 of their junior year.

Film

For courses in film, see Institute of the Arts.

Forestry and Environmental Studies (FES)

Students who are preparing for professional careers in natural resources and the environment should refer to the section on undergraduate-professional combination programs in this bulletin. The courses listed below are described fully in the *Bulletin of Duke University: School of Forestry and Environmental Studies*. They are open to undergraduates by consent of the instructor.

191, 192. Independent Study. Open to qualified juniors and seniors with consent of the student's major adviser and the instructor. Credit to be arranged. *Staff*

194. Conserving Natural Resources. Open to undergraduates only. One course. *Staff*

200. Student Projects. Prerequisite: consent of the dean of the School of Forestry and Environmental Studies. Credit to be arranged. *Staff*

201. Field Studies. Credit to be arranged. *Staff*

204. Forest Inventory, Growth, and Yield. One course. *Staff*

205. Silviculture. One course. *Staff*

207L. Forest Pest Management. One course. *Stambaugh*

208. Fire Behavior and Use. One course. *Staff*

210L. Forest Pathology. One course. *Stambaugh*

211L. Applied Ecology and Ecosystem Management. One course. *Richardson*

212. Ecosystem Dynamics in Forest Productivity. One course. *Boyce*

213. Forest Ecosystems. One course. *Binkley*

215. Environmental Physiology. One course. *Di Giulio and Richardson*

- 216. Applied Population Ecology. One course. *Staff*
- 218. Barrier Island Ecology. Prerequisite: course in general ecology. (Given at Beaufort.) C-L: Botany 218 and Marine Sciences. One and one-half courses. *Staff*
- 221L. Forest Soils. One course. *Binkley*
- 230. Weather and Climate. One course. *Knoerr*
- 231. Environmental Climatology. One course. *Staff*
- 232. Microclimatology. C-L: Botany 232. One course. *Knoerr*
- 234. Watershed Hydrology. One course. *Marin*
- 236. Water Quality Management. One course. *Reckhow*
- 237. Watershed Modeling and Management. Prerequisite: Forestry and Environmental Studies 234. One course. *Knoerr and Marin*
- 251. Natural Resource Data Analysis. One course. *Wilkinson*
- 261. Remote Sensing for Resource Management. One course. *Davison*
- 267. Wildland and Wildlife Management. One course. *Staff*
- 269. Business Aspects of Natural Resource Management. One course. *MacKinnon*
- 270. Resource Economics and Policy. Prerequisite: introductory course in economics or consent of instructor. C-L: Public Policy Studies 272. One course. *Hyde*
- 283. Environmental Policy and Values. One course. *Royer*
- 285. Land Use Principles and Policies. One course. *Healy*

French

For courses in French, see Romance Languages.

Genetics—The University Program

Professor Antonovics, *Director*, (botany); Professors Amos (immunology), Boynton (botany), Counce (anatomy), Gillham (zoology), Gross (biochemistry), Guild (biochemistry), Joklik (microbiology), Kredich (medicine and biochemistry), Moses (anatomy), Nicklas (zoology), C. Ward (zoology), F. Ward (immunology), and Webster (biochemistry); Associate Professors Bastia (microbiology), Endow (microbiology), Greene (biochemistry), Greenleaf (biochemistry), Keene (microbiology), Linney (microbiology), Modrich (biochemistry), Rausher (zoology), and Steege (biochemistry); Assistant Professors Burdett (microbiology), Hershfield (medicine and biochemistry), Holmes (medicine and biochemistry), Hsieh (biochemistry), Johnston (botany), Kaufman (biochemistry), Kreuzer (microbiology), Ostrowski (microbiology and immunology), Schachat (anatomy), and Uyenoyama (zoology); Adjunct Professors Drake (National Institute of Environmental Health Sciences), Judd (National Institute of Environmental Health Sciences), Lucchesi (University of North Carolina), and Resnick (National Institute of Environmental Health Science)

The University Program in Genetics provides a coherent course of study in all facets of biology related to genetics. Students interested in preparation for advanced work in genetics or wishing to take an interdisciplinary major in this area should consult Professor Antonovics (135 Biological Sciences Building). Information concerning interdisciplinary programs involving biology should be discussed with the appropriate Directors of Undergraduate Studies.

For descriptions of the courses consult the listings under the specified departments.

Introduction to Genetics. (Zoology 117.) One course. *Ward*

Principles of Genetics. (Botany 180, Botany 280, Zoology 180, and Zoology 280.) One course. *Antonovics, Boynton, and Gillham*

Genetic Engineering. (Botany 205.) One course. *Johnston*

Genetic Mechanisms. (Biochemistry 215.) One course. *Gross and staff*

Molecular Biology II: Nucleic Acids. (Biochemistry 268.) One course. *Modrich and staff*

Extrachromosomal Inheritance. (Botany 283 and Zoology 283.) One course. *Boynnton and Gillham*

Ecological Genetics. (Botany 285S.) One course. *Antonovics*

Evolutionary Mechanisms. (Botany 286 and Zoology 286.) One course. *Antonovics, Uyenoyma, and H. Wilbur*

Independent Study and Special Problems. (Botany 191, 192, 225T, and 226T; Zoology 191 and 192.) Prerequisite: consent of instructor and the appropriate Director of Undergraduate Studies prior to registration.

Mathematical Population Genetics. (Zoology 288.) Calculus required; statistics and linear algebra recommended. One course. *Uyenoyma*

Geology (GEO)

Professor Perkins, *Chairman*; Assistant Professor Bloomer, *Director of Undergraduate Studies*; Professors Heron and Pilkey; Associate Professors Corliss, Johnson, Karson, and Rosendahl; Assistant Professor Baker; Visiting Assistant Professor Strelitz

10S. Analysis of Outcrops. Field interpretation of geologic features. Includes four field trips. Prerequisite: Geology 1 or 41 (may be taken concurrently). Half course. *Staff*

41. Introduction to Geology. Earth composition, processes, and structure. One course. *Heron and staff*

43S. Application of Geologic Principles. Mineral and rock classification, topographic and geologic map interpretation. Prerequisite: Geology 41 (may be taken concurrently). Half course. *Staff*

53. Introductory Oceanography. C-L: Botany 53. One course. *Pilkey and Searles*

72. History of the Earth. Physical and biological evolution of the earth from the viewpoint of global tectonics. Primarily for science majors. Fee for field trips. Weekend field trip through the Appalachians, and Saturday field trip through the Deep River Triassic Basin. Prerequisite: Geology 41 or consent of instructor. One course. *Corliss*

105. Fundamentals of Mineralogy. Crystal chemistry, crystal physics, mineral identification, and genesis. Lectures or recitations, laboratory, and field trips. Prerequisite: Chemistry 12 (may be taken concurrently). One course. *Bloomer*

106. Igneous and Metamorphic Rocks. Silicate mineralogy, theory of origin and classification of igneous and metamorphic rocks, and rock identification. Lectures and laboratory. Prerequisite: Geology 105. One course. *Bloomer*

108. Sedimentary Rocks. Authigenic and detrital minerals, theory of origin and classification of sedimentary rocks, and rock identification. Lecture, laboratory, and field trips. Prerequisite: Geology 72 or 105 or consent of instructor. One course. *Heron*

111. Stratigraphic Principles and Applications. Prerequisites: Geology 72 and 108 or consent of instructor. One course. *Perkins*

130. Principles of Structural Geology. Description, origin, and interpretation of primary and secondary geologic rock structures. Prerequisites: Geology 106 and 108. One course. *Karson*

145. Invertebrate Paleontology. Biologic and stratigraphic relationships of invertebrates and their phylogeny. Lectures and laboratory. Prerequisite: Geology 72 or consent of instructor. One course. *Corliss*

191, 192. Independent Study. Directed reading or research. Open only to qualified juniors and seniors by permission of the Director of Undergraduate Studies and supervising instructor. Two courses. *Staff*

195. Independent Study for Nonmajors. Open to qualified juniors and seniors upon approval of the departmental faculty. One course. *Staff*

196S. Beach and Island Geological Processes. Processes affecting evolution of beaches and barrier islands with emphasis on the effect of constructions. (Given at Beaufort on three weekends.) C-L: Marine Sciences. Half course. *Pilkey*

For Advanced Undergraduates and Graduates

200. Beach and Coastal Processes. The study of sedimentary processes and geomorphology of nearshore environments with emphasis on both developed and undeveloped barrier island systems. One course. *Pilkey*

203. Physical Oceanography. Physical processes in the oceans: the physical properties of seawater, the dynamics of currents, waves, and tides, and the transmission of light and sound in the sea. Prerequisite: Physics 41 or 51. (Given at Beaufort.) C-L: Marine Sciences. Half course. *Johnson*

204. Chemical Oceanography. An introduction to chemical processes in the oceans: including factors controlling the major ion composition of sea salt, the distribution of dissolved gases in seawater, sediment-seawater interactions, and seawater-basalt interactions at oceanic ridge crests. Prerequisites: Chemistry 11 and Geology 203 (may be taken concurrently). (Given at Beaufort.) C-L: Marine Sciences. One course. *Staff*

205S. Geological Oceanography. The geology of ocean basins, including origin, bottom physiography, sediment distribution, and sedimentary processes. Not open to students who have taken Geology 206S. (Given at Beaufort.) C-L: Marine Sciences. One course. *Johnson*

206S. Principles of Geological Oceanography. Geological aspects of the ocean basins including coastal to deep water sediment types and sedimentation processes, sea floor physiography and environmental problems. One course. *Pilkey*

208S. Paleooceanography. Application of stratigraphic, paleontologic, and geochemical evidence in sediments to understanding ancient oceans and climates. Prerequisite: Geology 206S or consent of instructor. One course. *Baker*

212. Carbonate Facies Analysis: Recent and Ancient. Origin, distribution, and diagenetic alteration of recent carbonate sediments and their ancient analogs. Prerequisite: Geology 111. One course. *Perkins*

214S. Sedimentary Petrography. Descriptive and interpretive analysis of sediments and sedimentary rocks in thin section, with an emphasis on diagenesis. Prerequisite: consent of instructor. One course. *Perkins*

215. Clastics Facies Analysis: Recent and Ancient. Modern clastic depositional systems and their ancient analogs. Prerequisite: Geology 111. One course. *Heron*

216. Field Analysis of South Florida Carbonates. Analysis of recent sediments and organisms and their Pleistocene analogs. One-week field trip. Prerequisite: Geology 111 or consent of instructor. Pass/fail only. Half course. *Perkins*

217. Field Analysis of Ancient Sedimentary Sequences. Regional analysis of ancient clastic and carbonate systems. One-week field trip. Prerequisite: Geology 111 or consent of instructor. Pass/fail only. Half course. *Heron and Perkins*

249. Marine Micropaleontology. Introduction to marine microfossils, basic principles of micropaleontology and stable isotope geochemistry with applications to pa-

leoceanography. Lectures and laboratory. Prerequisite: Geology 206S or consent of instructor. One course. *Corliss*

251. Physics of the Earth. Origin, primeval evolution, rotation, potential fields, paleomagnetism, gravity anomalies, earthquake seismology, thermal properties, internal structure of the earth, and thermodynamics of plate motions. Prerequisites: Geology 41 and Chemistry 12 and Mathematics 32 and Physics 52 or consent of instructor. One course. *Rosendahl*

252. Exploration Seismology. Elastic wave theory, reflection and refraction of acoustic waves, field methodologies, computer processing, and interpretation of seismic data. Prerequisites: Geology 41 and Mathematics 32 and Computer Science 51 and Physics 52 or consent of instructor. One course. *Rosendahl*

255. Seismic Interpretation. Basic rock physics, seismic expression of structural styles, seismic facies analysis, maps generated from seismic data, and basin-wide seismic stratigraphic analysis. Prerequisite: Geology 251; corequisite: Geology 252 or consent of instructor. One course. *Rosendahl and Staff*

260S. Hydrocarbon Exploration. Origin, migration, and accumulation of hydrocarbons with emphasis on exploration techniques. Prerequisites: Geology 111 and 251. One course. *Perkins and Rosendahl*

270. Geochemistry. Application of chemical principles to geological problems. Prerequisites: Chemistry 12 and Mathematics 32. One course. *Baker*

271. Low-Temperature Geochemistry. Chemistry of aqueous solutions, authigenic minerals, surface chemistry, and stable isotopes in sedimentary systems. Prerequisite: Geology 270 or consent of instructor. One course. *Baker*

272. Biogeochemistry. Processes controlling the circulation of carbon and biochemical elements in natural ecosystems and at the global level, with emphasis on soil and surficial processes. Prerequisite: Chemistry 12, Botany 146L, or equivalent. C-L: Botany 272. One course. *Schlesinger*

281S. Advanced Topics in Igneous Petrology. Current topics in igneous petrology including andesite petrogenesis, ocean ridge basalts, and experimental petrology. Prerequisites: Geology 105 and 106. One course. *Bloomer*

292. Computer Methods in Geology. Techniques used in the geological sciences including simulation and forward modeling, inverse and least squares methods, statistical methods and exploratory data analysis as well as graphics. Prerequisites: Mathematics 32 and Computer Science 51, or consent of instructor. One course. *Strelitz*

295S. Advanced Topics in Geology. Topics, instructors, and credits to be arranged each semester. *Staff*

COURSES CURRENTLY UNSCHEDULED

1. Introductory Geology

253S. Geophysics

254. Geophysical Field Methods

THE MAJOR

For the A.B. Degree

Prerequisites. Geology 41 and 72; Chemistry 11 and 12; and Mathematics 31 and 32.

Major Requirements. A minimum of eight geology courses above the introductory levels, including 105, 106, 108, 111, 130, and 145.

For the B.S. Degree

The Department of Geology offers two programs:

Geology: Preparatory to Advanced Studies in Geology

Prerequisites. Geology 41 and 72; Chemistry 11 and 12; Mathematics 31 and 32; Physics 41 and 42 or 51 and 52; and Computer Science 51.

Major Requirements. Required courses include 105, 106, 108, 111, 130, 145, a field course normally taken during the summer after the junior year, and three other geology courses above the introductory level.

Geology: Preparatory to Advanced Studies in Oceanography

Prerequisites. Geology 41 and 72; Geology 53 (or 206); Chemistry 11 and 12; Physics 41 and 42 or 51 and 52; Biology 14; Mathematics 31 and 32; and two courses of science electives.

Major Requirements. A minimum of seven geology courses above the introductory level, including 105, 106, 108, 111, 130, and 145.

Germanic Languages and Literature

Associate Professor Borchardt, *Chairman*; Assistant Professor Bessent, *Director of Undergraduate Studies and Supervisor of Freshman Instruction*; Associate Professors Alt and Rolleston; Assistant Professors Morton and Westphal-Wihl; Professor Emeritus Phelps; Visiting Professor Jantz; Instructors Johns and Koeppel; Lecturers Dowell and Lauf

GERMAN (GER)

1-2. Elementary German. Practice in understanding, speaking, reading, and writing. Classroom techniques are combined with those of the language laboratory and the computer. Two courses. *Bessent and staff*

14. Intensive German. Accelerated introduction to German, combining in one semester the work of German 1-2. Classroom theory and practice with extended exposure to language laboratory and computer programmed instruction. Prerequisite: consent of Director of Undergraduate Studies. Two courses. *Lauf*

63. Intermediate German. Prerequisite: German 1-2 or equivalent. One course. *Lauf and staff*

German 63 is usually followed by 100S, 101, or 117S.

65-66. German in Review. Grammar review, reading of literary and cultural texts, oral practice, laboratory and computer augmented instruction. Prerequisite: German 1-2, 14, or equivalent. Not open to students who have had German 63. Two courses. *Dowell*

100S. Business German. Introduction to the language of commerce and industry; modes of expression for technology and marketing. Prerequisite: consent of instructor. One course. *Koeppel*

101. Introduction to German Literature. Readings from representative German authors. One course. *Bessent*

103S, 104S. Undergraduate Seminars. Topics vary. Two courses. *Staff*

105. Composition. Syntax with practice in the elements of German expository style, recommended for majors. One course. *Bessent and staff*

109S. Nineteenth-Century Prose Fiction. Emphasis on shorter forms: novelle, fairy tale, legend. One course. *Bessent*

115S. Drama. Development of German drama and stagecraft from *Sturm und Drang* to Brecht's *Epic Theater*. C-L: Drama 124S. One course. *Alt*

117S, 118S. German Conversation and Composition. Primarily conversation with oral and written reports, based on works by contemporary writers of East and West Germany. Required for German majors; other students by consent of instructor. Two courses. *Bessent, Johns, Koepfel, and Lauf*

119, 120. Advanced Intensive German. Emphasis on German cultural, political, historical, and literary developments in the twentieth century. Only offered in the Berlin-Semester-Exchange Program. Two courses. *Staff*

124S. Reason and Imagination. The eighteenth-century revolution in thought and sensibility, and its impact on literature: nature and the organic paradigm, genius, national cultures, and history as evolution and as progress. Lessing, Herder, Klopstock, Wieland, and Lenz. One course. *Morton*

125S. German Literature to World War I. Selected nineteenth- and early twentieth-century texts to explore and define elements of the modern. Kleist, Hoffmann, Büchner, Heine, Nietzsche, and Thomas Mann. One course. *Alt or Rolleston*

126S. German Literature since World War I. From expressionism to the present, the social and intellectual contexts. Mann, Kafka, Rilke, Böll, and Grass. One course. *Rolleston*

127S. Contemporary Germany. The current literary scene in the two Germanies in its cultural, social, and political contexts. C-L: Comparative Area Studies. One course. *Bessent*

129. Deutsche Kulturgeschichte. An analysis of the larger historical, political, and cultural developments and their influences on present-day Germany. C-L: Comparative Area Studies. One course. *Staff*

130. German Life and Thought. German cultural and intellectual history. Reading and discussion in English. Taught in English. C-L: Comparative Area Studies. One course. *Borchardt*

131S. Goethezeit. The struggle for order in an age of revolution. Weimarer classicism and the response to the romantic impulse. Herder, Goethe, Schiller, Jean Paul, and Hölderlin. One course. *Morton*

132. The Romantics. Major writers of the romantic movement (1795-1830) considered in their national and international context. One course. *Rolleston*

172. Modern German Literature in English Translation. Representative works by such writers as Mann, Kafka, Hesse, Brecht, Böll, and Grass. Taught in English. One course. *Borchardt or Morton*

173. Goethe's Faust in English Translation. The poem, its place in world literature, and its cultural and historical backgrounds. One course. *Borchardt*

175. Consciousness and Modern Society. The blend of philosophy, literature, and sociology in German thinking about actual and possible societies. The idea of consciousness as producing involvement, detachment, or transformation. Marx, Nietzsche, Lukacs, Freud, Marcuse, Benjamin, Adorno, and Habermas. Texts and discussion in English. C-L: Comparative Area Studies. One course. *Rolleston*

181. German for Reading, I. Foundations of German grammar and syntax; emphasis on vocabulary and complex verbal structures. Not open for credit to students who have completed German 1-2 or the equivalent. One course. *Staff*

182. German for Reading, II. Advanced reading practice with intensive grammar review; scholarly and technical selections flexibly chosen to accommodate individual student needs. One course. *Staff*

191, 192. Independent Study. Directed reading and research. Open only to qualified students in the junior year, by consent of Director of Undergraduate Studies. Two courses. *Alt, Bessent, Borchardt, Morton, Rolleston, or Westphal-Wihl*

193, 194. Independent Study. Directed reading and research. Open only to qualified students in the senior year, by consent of the department. Two courses. *Alt, Bessent, Borchardt, Morton, Rolleston, or Westphal-Wihl*

For Seniors and Graduates

200S. Proseminar. Fundamental course for advanced study of German. Literary history; schools of criticism; practical exercises in interpretation; and research methods. One course. *Alt*

201S, 202S. Goethe. His life and works, in the light of his lasting significance to Germany and world literature. 201S: lyrics, prose, fiction, and selected dramas. 202S: *Faust I and II*. Two courses. *Morton*

205, 206. Middle High German. The language and literature of Germany's first classical period. C-L: Linguistics and Medieval and Renaissance Studies. Two courses. *Westphal-Wihl*

207S. German Romanticism. The principal writers of the period from 1795 to 1830. One course. *Rolleston*

209S. Drama. Studies in the German-speaking theater with emphasis on the nineteenth century. One course. *Alt*

210S. The Eighteenth Century. The culture of reason, progress, and the individual in early modern philosophy and literature. Leibniz, Lessing, Herder, Kant, and Schiller. One course. *Morton*

211S. Nineteenth-Century Literature. From the end of romanticism through realism. One course. *Alt*

214S. The Twentieth Century. Literature of the twentieth century presented through representative authors. One course. *Rolleston*

215S. Seventeenth-Century Literature. Leading writers of the baroque, viewed against the background of their time. C-L: Medieval and Renaissance Studies. One course. *Borchardt*

216. History of the German Language. Development of the phonology, morphology, and syntax of German from the beginnings to the present. C-L: Linguistics and Medieval and Renaissance Studies. One course. *Westphal-Wihl*

217S. Renaissance and Reformation Literature. The period from 1400 to about 1600. C-L: Medieval and Renaissance Studies. One course. *Borchardt*

218S. The Teaching of German. A survey of modern teaching techniques: problems in the teaching of German on the secondary and college levels. Analysis and evaluation of textbooks, related audiovisual materials, and computer programs. One course. *Alt*

219. Applied Linguistics. The application of modern linguistic principles to a systematic study of the phonetics, morphology, and syntax of modern German. C-L: Linguistics. One course. *Westphal-Wihl*

230S. Lyric Poetry. Studies in poetry and poetic theory. From Goethe and the romantics to Rilke, Benn, and contemporary authors. One course. *Rolleston*

YIDDISH (YDH)

171. Yiddish Fiction in Translation. Representative works of the classics (Mendele, Peretz, Sholem Aleichem, Asch, and Goldfaden) as well as of selected poets. C-L: Judaic Studies. One course. *Alt*

181, 182. Elementary Yiddish. A thorough study of elementary Yiddish grammar with reading, composition, and oral practice. No previous knowledge of German or Hebrew required. C-L: Judaic Studies. Two courses. *Alt*

COURSES CURRENTLY UNSCHEDULED

191, 192. Independent Study

THE MAJOR

Students majoring in German develop language skills in their cultural and literary context. The international and humanistic emphasis makes the German major an appropriate companion to technical and career-oriented concentrations. Numerous opportunities are available, including programs of study abroad, interdisciplinary programs, and Fulbright and German Academic Exchange Service (DAAD) scholarships.

Prerequisites. Elementary and intermediate German.

Major Requirements. Conversation and composition (German 117S, 118S or equivalent), plus six advanced courses, three of which must be at the 200 level. The following courses may not be used to fulfill major requirements: 172, 173, 181, 182. Either 130 or 175 (but not both) may count towards the major.

Honors. Any student who is qualified (see the section on honors in this bulletin) may undertake work toward a degree with distinction in German by applying to the Director of Undergraduate Studies.

Greek

For courses in Greek, see Classical Studies.

Health, Physical Education, and Recreation (PE)

Professor Friedrich, *Chairman*; Associate Professor Spangler, *Director of Undergraduate Studies*; Professor Buehler; Associate Professors Harvey, LeBar, Lloyd, Raynor, Riebel, Skinner, and Woodyard; Part-time Instructors Beguinet, Gringle, McNutt, Pollard, and Trout; Lecturers Harris and McCraw

ACTIVITY COURSES

The activity courses listed below may be taken by men and women unless otherwise indicated. Each course carries a half-course credit and is given on a pass/fail basis. The maximum amount of credit that counts for the undergraduate degree is one full course, but additional courses may be taken without credit toward graduation.

10. Adapted Physical Education. Individualized programs for permanently or temporarily disabled students. Half course. *Riebel*

11. Cardiorespiratory Conditioning and Aerobics. Individualized programs in walking, jogging, running, cycling, and swimming. Half course. *Buehler*

12. Dancing for Health. Dancing for cardiovascular and physical conditioning. Half course. *McCraw*

13. Weight Control. Individualized exercise and diet programs. Prerequisite: consent of physician. Half course. *McCraw*

14. Tension Control. Techniques for recognizing and reducing tension. Half course. *Riebel*

15. Weight Training. Progressive, cumulative, and measurable physical conditioning. Half course. *Riebel*

16. Endurance Swimming. Individualized programs to improve skills and fitness. Half course. *Spangler*

20. Beginning Swimming. Propulsion techniques, water safety, introduction to the five basic strokes. Half course. *Spangler*

21. Intermediate Swimming. Development of the five basic strokes, overarm side trudgen, and trudgen crawl. Half course. *Spangler*

22. Advanced Swimming. Skill development and endurance. Half course. *Spangler*

24. Lifesaving. American Red Cross Advanced Lifesaving certification. Half course. *Woodyard*

25. Water Safety Instructors Course. American Red Cross Water Safety Instructors certification. Half course. *Woodyard*

26. Scuba Diving. Half course. *Pollard*

27. Kayaking. Basic skills for kayaking in whitewater. Half course. *Harvey*

28. Canoeing. Basic skills for canoeing in whitewater. Half course. *Riebel*

30. Beginning Golf. Half course. *Lloyd*

31. Intermediate and Advanced Golf. Strategy of the game and use of all clubs. Half course. *Lloyd*

40. Beginning Tennis. Half course. *LeBar*

41. Intermediate Tennis. Strategy of the game and stroke development. Half course. *LeBar*

42. Advanced Tennis. Stroke development with emphasis on strategy. Half course. *LeBar*

43. Racquetball and Squash. Half course. *Skinner*

44. Badminton and Racquetball. Half course. *Friedrich*

45. Advanced Racquetball. Development of competitive skills. Half course. *Skinner*

51. Self-Defense: Karate. Fundamentals of selected martial arts. Half course. *Pollard*

52. Fencing. Foils, épée, and saber. Half course. *Beguinet*

60. Volleyball. Half course. *Wilson*

70. Folk Dancing. Dances and music, folklore, and costumes. Half course. *Wray*

71. Square Dancing. Calls and steps. Half course. *McCraw*

72. Social Dancing. Waltz, foxtrot, tango, cha-cha, rumba, jitterbug, rock, disco, and others. Half course. *Trout*

80. Equitation. Skills in balance seat riding: walk, trot, and canter. Half course. *Brunson*

81. Advanced Equitation: Hunt Seat. Cross-country and stadium jumping techniques. Half course. *Staff*

95. Wilderness Skills. Basic and/or intermediate outdoor camping and leadership skills: orienteering, navigation, campcraft, equipment, trip planning, first aid and safety, with emphasis on "learning by doing." Half course. *McNutt*

THEORY COURSES

100. Advanced First Aid and Cardiopulmonary Resuscitation. Certification in advanced first aid and CPR. Half course. *McCraw*

102. Teaching Elementary Physical Education. Theory and practice in teaching basic skills, rhythms, and games for grades K–6. Half course. *Spangler*

110. Diet and Nutrition. Health implications of diet and nutrition: alcohol as food and beverage, anorexia and bulimia, vegetarian options, exercise, "junk" foods, food additives, and other topics. Half course. *Gringle*

112. Alcohol and Society. Historical and legal perspectives; alcohol use on college campuses, problem drinking, alcohol dependence, and options for treatment for the alcohol-troubled person. Half course. *Gringle*

134. Elementary School Health. Organization of health programs, basic health problems, and teaching methods and materials for grades K–6. Half course. *McCraw*

136. Health and Fitness. Theory and practice of personal health: body mechanics, exercise, weight control, and nutrition. Recent research in sports medicine. One course. *Harris*

170. History of Sports. Sports from ancient to modern times with an emphasis on sports in America. One course. *Friedrich*

171. Recreation Leadership. Concepts and techniques with an emphasis on organizing recreation for special groups. One course. *Friedrich*

174. Health and Wellness for the College Student. A problem-solving approach to health concerns. One course. *Friedrich*

Hindi—Urdu

For courses in Hindi–Urdu, see Asian and African Languages.

History (HST)

Professor Lerner, *Chairman*; Associate Professor Miller, *Director of Undergraduate Studies*; Professors Bergquist, Cell, Chafe, Colton, C. Davis, Durden, Holley, Mauskopf, Oates, Richards, A. Scott, W. Scott, TePaske, Witt, and Young; Associate Professors Dirlik, Gavins, Goodwyn, Kuniholm, Nathans, Reddy, Roland, and Wood; Assistant Professors Barnett-Robisheaux, R. Davis, English, Ewald, Gaspar, Gordon, Herrup, and Neuschel; Professor in the Faculty of Arts and Sciences Cahow; Professors Emeriti Ferguson, Franklin, Parker, Preston, Ropp, and Watson

History courses offer students from all disciplines within the University an opportunity to investigate the past, gain perspective on the present, and improve their critical faculties. History provides an integrating principle for the entire learning process, and students of history gain a sense of human development, an understanding of fundamental and lasting social processes, and a feeling for human interrelatedness. History courses train the mind by improving skills in communicating thought and imagination.

INTRODUCTORY COURSES

Students are urged, but not required, to take two introductory courses before proceeding to advanced-level courses. Majors take a sequence of two introductory courses in history (21, 22; 21S, 22S; 23; 25, 26; 53, 54; 75, 76; 91, 92; 91S, 92S or 93S). Additional courses may be chosen from this group as electives or part of the departmental major.

21. Europe to the Eighteenth Century. Development and world impact of European civilization, critical evaluation of historical interpretations, and investigation of history from primary sources. One course. *Staff*

21S. Europe to the Eighteenth Century. A seminar version of History 21. One course. *Staff*

22. Europe from the Eighteenth Century. Development and world impact of European civilization, critical evaluation of historical interpretations, and investigation of history from primary sources. One course. *Staff*

22S. Europe from the Eighteenth Century. A seminar version of History 22. One course. *Staff*

23. Europe to the Eighteenth Century. Readings, lectures, and discussions in *French*; examinations in English. Development and world impact of European civilization, critical evaluation of historical interpretations, and investigation of history from primary sources. Satisfies History 21 requirement for history majors. Prerequisite: French advanced placement credit or French achievement test score of 600 or above; or equivalent. One course. *Witt*

25. Introduction to World History: to 1700. The beginning and evolution of civilization; major traditions of Eurasia (Greek, Christian European, Indian, Chinese, Islamic); Africans and American Indians; the European invasion of America; foundations of the European world economy; Europe's preparation for world hegemony. C-L: Comparative Area Studies. One course. *Staff*

26. Introduction to World History: since 1700. Establishment of European political, economic, and cultural hegemony; non-Western responses; the decline of Western hegemony. C-L: Comparative Area Studies. One course. *Staff*

49S. Freshman Innovative Seminar. Topics vary each semester offered. One course. *Staff*

53. Greek History. See C-L: Classical Studies 53. One course. *Boatwright*

54. Roman History. See C-L: Classical Studies 54. One course. *Boatwright*

75, 76. The Third World and the West. Economic, social, political, and cultural relationships, 1500 to the present. C-L: Comparative Area Studies. Two courses. *Bergquist, R. Davis, Dirlik, Ewald, Gordon, and Richards*

91. The Development of American Democracy to 1865. The trends vital to an understanding of the United States today. The development of American democracy. Problems of foreign policy, the growth of capitalism, political practices, social reform, and conflicting ideals are considered in relation to this main theme. One course. *Staff*

91S. The Development of American Democracy to 1865. Seminar version of History 91. One course. *Staff*

92. The Development of American Democracy, 1865 to the Present. A continuation of History 91 with emphasis upon the emergence of contemporary problems in the United States. Students who have taken History 93S may not receive credit for History 92. One course. *Staff*

92S. The Development of American Democracy, 1865 to the Present. Seminar version of History 92. One course. *Staff*

93S. Modern American History. Same as History 92, but emphasizing additional topics considered appropriate for the Program in Twentieth-Century America. Open only to students in that program. One course. *Staff*

UNDERGRADUATE COLLOQUIA

Colloquia are open without prerequisite to all undergraduates and are designed for the nonspecialist, although history majors may take them for credit. Each colloquium consists of reading and discussion involving an explicit historical theme. Short papers, reports, and a final examination may be required. Unlike seminars, which emphasize materials and methods of historical research, colloquia concentrate on historical literature.

101G, 102G. Introduction to Islamic Civilization. See C-L: Interdisciplinary Courses 162, 163; also C-L: Anthropology 147, 148; Comparative Area Studies; and Religion 162, 163. Two courses. *Lawrence and staff*

101H. Structures, Science, and Society. The historical and scientific importance of selected structures. Monuments, buildings, bridges, and machines from Stonehenge to nuclear reactors. (Taught in London.) One course. *Mauskopf*

UNDERGRADUATE SURVEY COURSES

100. Early Greece and the Near East. C-L: Classical Studies 133. One course. *Oates*

103. The Roman Revolution. C-L: Classical Studies 137. One course. *Oates*

104. The Intellectual Life of Europe, 1250-1600. C-L: Medieval and Renaissance Studies. One course. *Barnett-Robisheaux and Witt*

105, 106. Political and Constitutional History of England. The origins and evolution of the principal institutions of the English government, related to their setting in a changing society. C-L: Comparative Area Studies, and for 105: Medieval and Renaissance Studies. Two courses. *Cell and Herrup*

107, 108. Social and Cultural History of England. English history from the fourteenth century to the present time in an effort to arrive at a synthesis of ideas, social conditions, and political events and thus provide a background for the study of English literature. C-L: Comparative Area Studies and for 107: Medieval and Renaissance Studies. Two courses. *Cell and Herrup*

109. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy. C-L: Anthropology 109, Comparative Area Studies, Interdisciplinary Course 109, Political Science 160, Religion 156, and Sociology 175. One course. *Staff*

110. Labor Movements in the Americas. Problems of working-class consciousness, organization, and political action; effects of the labor movement on historical developments in the twentieth-century Latin and North American societies. C-L: Comparative Area Studies. One course. *Bergquist*

111. Early America to 1760. Pre-Columbian explorations, European invasion of North America, the evolution of race slavery, and the responses of the native American peoples. One course. *Wood*

112. Era of the American Revolution, 1760-1815. Origins, evolution, and consequences. Attention to economic, social, and geographical questions, as well as military and political. One course. *Wood*

113, 114. The United States from the 1890s to World War II. 113: to 1920. 114: through the New Deal. Two courses. *Staff*

115, 116. History of Africa. Social, political, and economic development in tropical Africa. 115: cultural background and precolonial history. 116: colonial and contemporary times. C-L: Comparative Area Studies. Two courses. *Ewald*

117. Early Modern Europe. The economic, social, and political history of early modern Europe. C-L: Comparative Area Studies and Medieval and Renaissance Studies. One course. *Neuschel*

118. Science in the Twentieth Century. One course. *Mauskopf*

119. Modern European Intellectual and Cultural History. The period between the French Enlightenment and the First World War: nationalism, ideology, revolution, and social theory; the writings of Hegel, Marx, Nietzsche, and Freud. One course. *Miller*

120. History of Socialism and Communism. The origins and development of socialist and communist movements from pre-Marxian times to the present. C-L: Comparative Area Studies. One course. *Lerner*

123S. Madness and Society in Historical Perspective. Mental illness and psychiatric treatment from antiquity to the present with special concentration on the nineteenth and twentieth centuries in Europe, America, and Russia. One course. *Miller*

124S. Slave Society in Colonial Anglo-America: the West Indies, South Carolina, and Virginia. The development of slave-based societies and the production of staple crops for export. One course. *Gaspar*

125. The Athenian Empire. See C-L: Classical Studies 134. One course. *Oates*

126. Alexander The Great. See C-L: Classical Studies 135. One course. *Oates*

127S. History and the Visual Image. Relationships between historical study and the visual image: painting, photography, films, and television. C-L: Film. One course. *Bergquist, TePaske, and Wood*

128. The United States and Latin America. Economic, cultural, political, and diplomatic relationships in the twentieth century. C-L: Comparative Area Studies. One course. *Bergquist*

129. Experiment in Republicanism: the United States, 1787-1860. One course. *Nathans*

130. From Victorian to Corporate America, 1820-1900. One course. *Nathans*

131. Mexico and the Caribbean from the Wars of Independence to the Present. C-L: Comparative Area Studies. One course. *TePaske*

132. Major South American Nations, 1850 to the Present. Comparative development of export economies of Brazil, Argentina, Colombia, Chile, and Venezuela and impact on social structure, politics, and culture. C-L: Comparative Area Studies. One course. *Bergquist*

133. Medieval Europe, A.D. 300-1400. C-L: Medieval and Renaissance Studies. One course. *Young*

134. Medieval England. From the fifth through the fourteenth centuries. C-L: Medieval and Renaissance Studies. One course. *Young*

135. Political, Economic, and Social History of Europe, 1890-1939. Europe in 1914: the First World War; rise of fascism; the Great Depression; triumph of Hitler in

Germany; Spanish Civil War; social politics of the 1930s. C-L: Comparative Area Studies. One course. *Colton*

136. Europe since 1939. Origins and nature of the Second World War; the cold war; Europe since 1945, with emphasis on the West-European nations. C-L: Comparative Area Studies. One course. *Colton*

137. Strategies of Comparative Analysis. See C-L: Interdisciplinary Course 125; also C-L: Anthropology 125, Comparative Area Studies, Political Science 125, and Sociology 125. One course. *Gereffi*

138. Early Modern Germany. The interplay of religious, social, economic, and political forces in Central Europe from the eve of the Protestant Reformation through the Thirty Years War: the roles of Luther, urban society, the Peasants' War, commercial expansion, population growth, and the witch craze. C-L: Medieval and Renaissance Studies. One course. *Barnett-Robisheaux*

139. China since 1949: the People's Republic. The Chinese path to communism and the communist transformation of Chinese society. One course. *Dirlik*

140. Medieval and Early Modern India, Pakistan, and Bangladesh. Surveys the Islamic period of South Asian history from c. 1200 A.D. to 1750 A.D. Special emphasis on the Delhi Sultanate, the Kingdom of Vijayanagara, the Rajput Confederacy, the Mughal Empire, and the Maratha before British conquest. One course. *Richards*

141. Imperial China. A survey course from antiquity to the modern period (eighteenth century). An exploration of social, economic, intellectual, and political themes. C-L: Comparative Area Studies. One course. *R. Davis*

142. China: Roots of Revolution. A survey of modern Chinese history with special emphasis on the nineteenth and twentieth centuries. C-L: Comparative Area Studies. One course. *Dirlik*

143. Ancient and Early Modern Japan. Japan from earliest settlement to 1868; the Heian Court, rise of the samurai, feudal society and culture, the Tokugawa age, and the Meiji Restoration. C-L: Comparative Area Studies. One course. *Gordon*

144. The Emergence of Modern Japan. Japan from Meiji to microchips. The Meiji settlement, industrialization and urban growth; political parties, social movements, and foreign policy in the imperial era; World War II and the American occupation; economic recovery. C-L: Comparative Area Studies. One course. *Gordon*

145, 146. Afro-American History. The black experience in America from slavery to the present. C-L: Afro-American Studies 145, 146. Two courses. *Gavins*

149. Military History. War, politics, and technology. One course. *Roland*

151. History of Technology. From primitive arts and crafts to the present, with emphasis on Western technology and its relationship to science and society. One course. *Roland*

152. The Decline and Fall of the Roman Empire. C-L: Classical Studies 138. One course. *Oates*

153S. The Insurgent South. Prerequisite: consent of instructor. C-L: Interdisciplinary Course 153S. One course. *Goodwyn*

157, 158. The Rise of Modern Science. The development of science and medicine, with attention to cultural and social influences upon science. 157: through Newton. 158: eighteenth to twentieth centuries. Two courses. *Mauskopf*

159S. The Palestine Problem and United States Public Policy. See C-L: Public Policy Studies 175S; also C-L: Comparative Area Studies. One course. *Kuniholm*

160. The United States from the New Deal to the Present. C-L: Women's Studies. One course. *Chafe*

161, 162. History of Modern Russia. 161: origins of Kievan Russia in the ninth century through the reign of Catherine the Great (1762-1796), concentrating on the formation of the imperial state, class elites, and psychological interpretations of the rulers. 162: nineteenth and early twentieth century to the death of Lenin, stressing the opposition movements in society. C-L: Comparative Area Studies. Two courses. *Miller*

163. Foundations of Chinese Civilization. (Taught in China.) C-L: Anthropology 163 and Comparative Area Studies. One course. *R. Davis, Dirlik, Kunst, and Weller*

164. India, Pakistan, and Bangladesh: 1750 to the Present. Social and economic impact of Western rule, development of nationalism and independence. C-L: Comparative Area Studies. One course. *Richards*

167S. United States and Canadian Constitutional Issues. A comparative study of the development of federalism. C-L: Canadian Studies and Comparative Area Studies. One course. *Cahow*

168S. The Atlantic Slave Trade. The development of the slave trade from the fifteenth century to its abolition in the nineteenth century; organization and mechanics, impact on Europe, Africa, and the Americas. C-L: Comparative Area Studies. One course. *Gaspar*

169S, 170S. The Social History of American Women. C-L: Women's Studies. Two courses. *A. Scott*

171. A History of Women in Europe. Women in Europe since medieval times, with particular attention to economic, social, and intellectual experience. C-L: Comparative Area Studies and Women's Studies. One course. *Neuschel*

173. History of Spain from Late Medieval Times to the Present. Development of the Spanish nation-state from the times of Ferdinand and Isabella, Charles V, and Philip II to the Franco regime and its aftermath. C-L: Comparative Area Studies and Medieval and Renaissance Studies. One course. *TePaske*

174. History of Colonial Hispanic America from Pre-Columbian Times to the Wars of Independence. The pre-Columbian cultures, European conquest and its effects on the Amerindian peoples, and development of the Spanish and Portuguese Empires to the wars of independence, with special emphasis upon colonial institutions and socio-economic developments. C-L: Comparative Area Studies and Medieval and Renaissance Studies. One course. *TePaske*

175S. The Southern Plantation as Historical Laboratory: Odyssey in Black and White, 1770-1970. Readings and discussion on the plantation as a microcosm of Southern social history since 1770, emphasizing the parallel evolution of black and white communities, families, economies, cultures, perceptions, and power struggles. One course. *Nathans*

176S. The Southern Plantation as Historical Laboratory: Research Seminar. Original research projects and seminar discussions on the social history of the plantation and its black and white inhabitants, relying on manuscripts at Duke and at the Southern Historical Collection, statistical records, the architectural legacy, literary and oral testimony, material culture, and folklore. One course. *Nathans*

177. Modern Latin America. A survey of nineteenth- and twentieth-century economic, social, and cultural change. C-L: Comparative Area Studies. One course. *Bergquist*

180. The Soviet Experience. A survey of the history of Russia and the Soviet Union from the eve of the Revolution to the present day with particular emphasis on political, social, and cultural change and continuity. Not open to students who have had History 262. One course. *Lerner*

182. Politics and Culture in Renaissance Florence. (Taught in Italy.) One course. *Witt*

183S. Canada from the French Settlement. Problems in the development of Canada and its provinces. C-L: Canadian Studies and Comparative Area Studies. One course. *Cahow*

184. An Introduction to Canada and Canadian Issues. See C-L: Interdisciplinary Course 184; also C-L: Canadian Studies, Comparative Area Studies, Economics 184, Political Science 184, and Sociology 184. One course. *Leach*

185. American Diplomacy from the Kennedy Administration to the Present. C-L: Public Policy Studies 185. One course. *C. Davis or Kuniholm*

186. Marxism and Society. See C-L: Anthropology 139; also C-L: Education 139, Interdisciplinary Course 139, and Sociology 139. One course. *Staff*

187. History and Religions of North Africa. See C-L: Religion 164; also C-L: Interdisciplinary Course 164. One course. *Lawrence*

188. German History and Culture. (Taught in Germany at the Free University of Berlin as part of the Duke University Exchange Program.) One course. *Staff*

189. The Americas: a Survey of the Forces Shaping the Hemisphere. Analysis of the social forces that created and transformed the increasingly interdependent societies of the Western Hemisphere—Canada, Latin America, and the United States. C-L: Anthropology 189, Comparative Area Studies, Interdisciplinary Course 189, Political Science 110, and Sociology 189. One course. *Bergquist*

193, 194. Introduction to the Civilizations of Southern Asia. See C-L: Interdisciplinary Courses 101, 102; also C-L: Anthropology 101, 102; Comparative Area Studies; and Religion 160, 161. Two courses. *Lawrence and staff*

SMALL GROUP LEARNING EXPERIENCES

Independent Study

Independent study is usually undertaken by students concurrently with a course or with an instructor with whom they have had a course. Students should submit to the instructor in writing a detailed description of intent in the study. Both the instructor's consent and approval of the Director of Undergraduate Studies are required for enrollment.

191, 192. Independent Study. One or two courses each. *Staff*

Undergraduate Seminars

See also History 21S, 22S, 91S, 92S, 93S, 123S, 124S, 150S, 153S, 159S, 168S, 183S.

165S, 166S. Seminars in Selected Topics. Course content determined by instructor. Prerequisite: consent of instructor. Two courses. *Staff*

195S, 196S. Seminars for Undergraduates. Opportunities for historical investigation of significant problems. Juniors as well as seniors may apply for admission to these courses and are urged to do so if they expect to be candidates for graduation with distinction in history or if they expect to practice-teach in their senior year. Open

to majors and nonmajors. The sections are listed below. Most sections are offered for year-long study and carry two course credits. Sections 25 through 32 are offered only for one semester and carry one course credit.

1. Renaissance Intellectual History, 1300 to 1600. C-L: Medieval and Renaissance Studies. *Witt*
2. Twentieth-Century Europe. *Colton*
3. Problems in the Social and Intellectual History of the United States. *Holley*
4. Medicine and Society in America. *English*
5. The Age of the American Revolution. *Wood*
6. The Era of the American Civil War, 1820-1900. *Durden*
7. Socialism and Revolution in East Asia. C-L: Comparative Area Studies. *Dirlik*
11. Problems in Modern British History. *Cell*
12. Europe and the World since 1914. *W. Scott*
13. Problems in Early Modern English History. C-L: Medieval and Renaissance Studies. *Herrup*
15. The Emergence of Industrial Society in Western Europe, 1780-1914. *Reddy*
16. Science and Society. *Mauskopf*
17. Processes of Development in Traditional and Modern Japan. C-L: Comparative Area Studies. *Gordon*
18. Problems in the History of Russia before 1917. C-L: Comparative Area Studies. *Lerner or Miller*
19. Social Conflict and Political Change in the United States, 1789-1860. *Nathans*
20. Comparative Problems in Early Modern European History. C-L: Medieval and Renaissance Studies. *Barnett-Robisheaux or Neuschel*
21. Problems in Indian History. C-L: Comparative Area Studies. *Richards*
22. Problems in Latin American History. C-L: Comparative Area Studies. *Bergquist or TePaske*
23. Issues in the History of Tropical Africa. C-L: Comparative Area Studies. *Ewald*
24. Problems in Recent United States Diplomatic History. *C. Davis*
25. Problems in Twentieth-Century American History. *Chafe*
26. Popular Protest in British Society, 1750-1914. *Staff*
27. Origins of the Cold War. *Kuniholm*
28. The Black Death and the Crisis of Late Medieval Europe. C-L: Medieval and Renaissance Studies. *Barnett-Robisheaux*
29. Problems in the History of Women in Europe. *Neuschel*
30. Traditions in China and the West. C-L: Comparative Area Studies. *R. Davis*
31. Issues in Third World Women's History. *Ewald*
32. Crime and Society: Changing Definitions of Criminality in England and America. *Herrup*

197S-198S. Senior Honors Seminar. Designed to introduce qualified students to advanced methods of historical research and writing and to the appraisal of critical historical issues. Open only to seniors, but not restricted to candidates for graduation with distinction. This course, when taken by a history major, is accompanied by either a year-long 195S-196S seminar or two courses at the 200 level. In unusual circumstances, with consent of the instructor, coordinator of the senior honors seminar, and Director of Undergraduate Studies, 191-192 may replace the two courses of 195S-196S seminars or the two courses at the 200 level. Two courses. *Staff*

ADVANCED COURSES (FOR SENIORS AND GRADUATES)

Students may receive credit for either semester of a hyphenated course at the 200 level without taking the other semester if they obtain written consent from the instructor.

201S. Aspects of Change in Prerevolutionary Russia. Origin and dynamics of the Russian revolutionary movement, the intelligentsia, and the emergence of the labor movement. C-L: Comparative Area Studies. One course. *Miller*

202S. The Russian Revolution. C-L: Comparative Area Studies. One course. *Miller*

215-216. The Diplomatic History of the United States. Not open to undergraduates who have had History 121, 122. C-L: Comparative Area Studies, and for 215: Canadian Studies. Two courses. *C. Davis*

217S, 218S. Western Europe in the Twentieth Century. Selected topics in political and social history: Europe in 1900; the impact of two world wars; the social politics of the Great Depression; Fascism and Nazism; economic recovery and changes after 1945. C-L: Comparative Area Studies. Two courses. *Colton*

219S, 220S. History of Science and Technology. The interaction of science and technology in the Western world from earliest times to the present. Two courses. *Mauskopf and Roland*

221. Problems in the Economic and Social History of Europe, 1200-1700. C-L: Medieval and Renaissance Studies. One course. *Witt*

222. Problems in the Intellectual History of the European Renaissance and Reformation. Prerequisites: History 104 and reading knowledge of German, French, or Italian. C-L: Medieval and Renaissance Studies. One course. *Witt*

227-228. Recent United States History: Major Political and Social Movements. C-L: Women's Studies. Two courses. *Chafe*

229S, 230S. Revolution in Modern Europe, 1789-1919. The French Revolution, the revolutions of 1830 and 1848, the Paris Commune, and the Russian and German revolutions of 1917 and 1918-1919. Emphasis on the evolution of historians' efforts at explanation of revolutions and on the relationship between social and political change. C-L: Comparative Area Studies. Two courses. *Reddy*

231S, 232S. Problems in the History of Spain and the Spanish Empire. C-L: Comparative Area Studies. Two courses. *TePaske*

234S. Political Economy of Development: Theories of Change in the Third World. See C-L: Political Science 234S; also C-L: Anthropology 234S, Comparative Area Studies, Interdisciplinary Course 234S, and Sociology 234S. One course. *Bergquist, Fox, Gereffi, Smith, and Valenzuela*

237S. Europe in the Early Middle Ages. C-L: Medieval and Renaissance Studies. One course. *Young*

238S. Europe in the High Middle Ages. C-L: Medieval and Renaissance Studies. One course. *Young*

239S. History of Socialism and Communism. Problems in the origins and development of socialist and communist movements. C-L: Comparative Area Studies. One course. *Lerner*

241-242. United States Constitutional History. 241: to 1865; 242: 1865 to present. Two courses. *Cahow*

243-244. Marxism and History. Two courses. *Dirlik*

247. History of Modern India and Pakistan, 1707-1857. C-L: Comparative Area Studies. One course. *Richards*

248. History of Modern India and Pakistan, 1857 to the Present. C-L: Comparative Area Studies. One course. *Richards*

249-250. Social and Intellectual History of the United States. The interplay of ideas and social practice through the examination of attitudes and institutions in such fields as science and technology, law, learning, and religion. Two courses. *Holley*

253S, 254S. European Diplomatic History, 1871-1945. Origins of the First and Second World Wars, the diplomacy of the wars, and the peace settlements which followed them. C-L: Comparative Area Studies. Two courses. *W. Scott*

262. Problems in Soviet History. Studies in the background of the Revolution of 1917 and the history and politics of the Soviet state. C-L: Comparative Area Studies. One course. *Lerner*

265S. Problems in Modern Latin American History. C-L: Comparative Area Studies. One course. *Bergquist*

267S, 268S. From Medieval to Early Modern England. C-L: Medieval and Renaissance Studies. Two courses. *Herrup*

269S-270S. British History, Seventeenth Century to the Present. Historiography of social structure and social change: English Revolution, party, the Industrial Revolution, class and class consciousness, Victorianism, and the impact of war in the twentieth century. C-L: Comparative Area Studies. Two courses. *Cell*

273S, 274S. Topics in the History of Science. Critical stages in the evolution of scientific thought. Two courses. *Mauskopf*

277S. The Coming of the Civil War in the United States, 1820-1861. One course. *Durden*

278S. The Civil War in the United States and Its Aftermath, 1861-1900. One course. *Durden*

279, 280. Health, Healing, and History. The development of medicine within the broader cultural context from prehistory to the twentieth century. Two courses. *English*

282S. Canada. See C-L: Interdisciplinary Course 282S; also C-L: Anthropology 282S, Canadian Studies, History 282S, Political Science 282S, and Sociology 282S. One course. *Leach*

285S, 286S. Oral History. Research on race relations and civil rights in the United States in the twentieth century using techniques of oral history. Prerequisite: consent of instructor. Two courses. *Chafe and Goodwyn*

Upperclassmen-Graduate Seminars

See History 201S, 202S, 205S, 206S, 209S, 210S, 219S, 220S, 224S, 226S, 229S, 230S, 231S, 232S, 234S, 237S, 238S, 253S, 254S, 255S-256S, 260S, 265S, 267S-268S, 269S-270S, 273S, 274S, 277S, 278S, 282S, 285S, 286S, 287S, and 288S.

COURSES CURRENTLY UNSCHEDULED

101K. Topics in Pre-Modern Chinese History

121, 122. Diplomatic History of the United States

147. History of Weapons

148. History of Nuclear Energy

150S. U.S. Constitutional History

155. Modern Mexico

172A. Contemporary Science: Issues and Challenges

172B. Contemporary Technology: Issues and Challenges

178. American Diplomacy during World War II and the Early Cold War: 1939-1961

205S. The Progressive Era in the United States and World War I

206S. The Nineteen-Twenties and the New Deal in the United States

235. The Antebellum South

236. The Reconstruction Era

HISTORY COURSES BY FIELDS

History courses for undergraduates are offered in five fields, as noted below; students majoring in the department must complete at least one course in each of three fields.

Africa, Asia, Canada, Caribbean, Latin America, Russia. History 26, 75, 76, 101G, 102G, 109, 110, 115, 116, 124S, 128, 131, 132, 141, 142, 143, 144, 155, 159S, 161, 162, 163, 164, 167S, 168S, 174, 177, 180, 183S, 184, 189; 195S-196S sections 7, 17, 18, 21, 22, 23, 30, 31; 201S, 202S, 231S, 232S, 234S, 239, 247, 248, 255S-256S, 260, 261-262, 265S, 282S, 287-288.

Ancient, Medieval and Renaissance. History 23, 25, 53, 54, 100, 103, 104, 105, 107, 125, 126, 133, 134, 152, 173; 195S-196S sections 1, 13; 221, 222, 237S, 238S, 267S-268S.

Medicine, Military, Science, Technology. History 101H, 123S, 127S, 147, 148, 149, 151, 157, 158, 181, 182, 187, 188; 195S-196S sections 4, 16; 213, 219S, 220S, 273, 274.

Modern Europe. History 21, 21S, 22, 22S, 49S, 101C, 106, 107, 108, 117, 119, 120, 135, 136, 137, 138, 139, 140, 154, 171, 179, 180, 182, 188; 195S-196S sections 2, 10, 11, 12, 14, 20, 26, 28, 29; 218S, 229S, 230S, 253S, 254S.

United States. History 91, 91S, 92, 92S, 93S, 111, 112, 113, 114S, 122, 129, 130, 145, 146, 150S, 153S, 160, 169, 170, 175S, 176S, 178, 185; 195S-196S sections 3, 5, 6, 19, 24, 25, 27; 205S, 206S, 209S, 210S, 212, 215-216, 227-228, 235, 236, 249-250, 277S, 278S, 285S, 286S.

THE MAJOR

Introductory Courses. Two introductory courses in history (21-22, 21S-22S, 23, 25-26, 53-54, 75-76, 91-92, 91S-92S, 93S).

Major Requirements. Eight courses in history including (1) at least two introductory courses, (2) at least one course in each of three out of the five fields described above, (3) two courses in an undergraduate seminar (195S-196S) or on the 200 level. Students are urged to register for two consecutive courses at this level, but may take two single semester courses with consent of both instructors. Students wishing to take advanced courses in a field are advised to elect the introductory course in that field.

Advanced Placement Credit. Two of the eight courses needed for the major may be fulfilled by advanced placement credits. If two additional advanced placement credits have been granted they may be applied toward the thirty-two credits needed for graduation, but may not be applied to the history major.

Foreign Languages. Majors interested in a particular area of study benefit from knowledge of the language of that area. Majors who contemplate graduate work are reminded of the requirement of a reading knowledge of one or two foreign languages.

Majors Planning to Teach. Majors who plan to teach in secondary schools should consult an adviser in education. Rising juniors who intend to practice-teach in the senior year should take the 195S-196S or 197S-198S seminars or 200-level courses as juniors. History 212 is scheduled in the spring in accelerated sessions to accommodate students who are on campus for half of the semester during the semester they do practice teaching.

Honors. Any student who is qualified (see the section on honors in this bulletin) may apply to the Director of Undergraduate Studies for permission to undertake work leading to a degree with distinction in history.

House Courses (HC)

See the chapter "Academic Procedures and Information" for information on house courses.

Human Development

Professor Maddox (sociology, psychiatry, and Center for Aging and Human Development), *Director*

The goal of this interdisciplinary program is to broaden and enhance the perspectives of students interested in human development. The program seeks to foster an understanding and appreciation of how biological and psychosocial factors act together in development throughout the life course; highlight the ways in which dif-

ferent disciplines conceptualize and study development; demonstrate the complementarity of disciplinary perspectives; and facilitate dialogue among faculty and students, illustrating the complementarity of and necessity for multidisciplinary perspectives.

Achievement of the program's goal is facilitated by an integrated curriculum of required and elective courses, a research apprenticeship, a lecture series, and other special events. An active advisory procedure assists students in planning learning opportunities. A certificate is available for students who complete program requirements. Participation in selective parts of the program and in the advisory system, however, is available to all undergraduates whether or not they seek the certificate.

The curriculum includes six courses, completion of which is required for the program certificate.

Interdisciplinary Course 124. Human Development. *Eckerman, Klopfer, and Stack*

Either Psychology 159S (Biological Psychology of Human Development, *Thompson and staff*) or Interdisciplinary Course 180, C-L: Psychology 130 and Sociology 169 (Psychosocial Aspects of Human Development, *Martin Lakin and Maddox*)

Interdisciplinary Course 190. Research Apprenticeship in Human Development. *Staff*

Interdisciplinary Course 191S. Senior Seminar in Human Development. *Staff*

Two elective courses chosen from an illustrative list of biological, psychological, and social scientific courses affiliated with the program published in the program brochure.

The research apprenticeship arranged through the program and the related senior seminar would ordinarily be available only to students seeking the program certificate. Other components of the program are available to all undergraduates.

Institute of the Arts

Artist-in-Residence Cerveris, *Director*; *Senior Fellows*: Applewhite (English), Ball (drama), Bone (music), Bryan (music), Clum (drama and English), Coon (cultural affairs), Goffen (art and art history), Hanks (music), Henry (music), Pope (English), Pratt (art and art history), Price (English), Smith (chapel music), Spencer (art and art history), B. Ward (philosophy), R. Ward (music), Williams (music), Withers (music), and Wray (dance). *Fellows*: Berg (music), Bloom (music), Desmond (dance), Dickinson (dance), Gaddy (drama), Harris (public policy studies), Herman (drama), Hill (drama), Jaffe (music), Jeffrey (music), Judd (drama), Kremen (psychology), Love (music), Muti (music), Parkins (music), Porter (English), Raimi (music), Shatzman (art and art history), Storer (drama), Taylor (music), Troxler (music), and Wynkoop (music). *Associate Fellows*: Azenberg (drama), Arnold (dance), Davis (dance), Dorrance (dance), and Smith (art and art history)

The Institute of the Arts coordinates activities in the creative and performing arts; originates interdisciplinary courses; assists students of dance, drama, visual arts, music, literary arts, and film to develop their interests and expertise by sponsoring artist residencies, workshops, and seminars; and works to define and enhance the place of the creative and performing artists in a liberal arts setting. Courses, festivals, and events sponsored by the institute bring together faculty and students in different art forms for multidisciplinary experiences and encourage an interdisciplinary perspective. All performing and creative artists who teach at Duke, whether regular faculty members or distinguished artists-in-residence, are fellows of the institute.

The institute provides advisers for interdepartmental concentrations and assists students in designing individualized courses of study for Program II. Student awards, honors projects, performances, and exhibitions are sponsored. A fall-semester off-campus residency program, the Duke in New York Arts Program, provides academic and professional experiences for selected juniors and seniors.

Interdisciplinary courses and special programs offered by the institute are described below, along with courses in the dance program, located in the institute, and

courses in the area of film. See departmental listings for courses and majors in art and art history, drama, English, and music.

Students seeking further information about the institute should consult the Institute of the Arts, 109 Bivins Building.

DUKE IN NEW YORK ARTS PROGRAM

The institute-sponsored Duke in New York Arts Program offers an intensive, off-campus experience for a select group of juniors and seniors. The program has four components, each earning one credit: a seminar, an arts internship, a course at New York University, and an independent study project. The Duke courses are described below under Institute Courses. For information on admission to this program, contact the Director of the Institute of the Arts.

INSTITUTE OF THE ARTS (AI)

101S. Arts Resources in New York. Investigation of a central theme through attendance at selected art events in the New York area supplemented by discussions, critical papers, and reports. Visiting Duke faculty members and New York practitioners in the arts provide guest lectures and lead discussions. Open only to those admitted to the Duke in New York Arts Program. One course. *Pratt and staff*

102. Arts Internship in New York. Immersion in the professional art world through apprenticeship to a sponsoring artist, scholar, or organization chosen to match each student's area of interest and expertise. Offered only on the pass/fail basis and open only to those admitted to the Duke in New York Arts Program. One course. *Staff*

181S. Art and Its Making. An inquiry into artistic process from a conceptual survey of dominant views to direct interviewing of and discussion with artists. Prerequisites: junior or senior standing and consent of instructor. C-L: Interdisciplinary Course 181S and Psychology 181S. One course. *Kremen*

188S. The Diaghilev Ballet, 1909-1929. Prerequisite: junior or senior standing or consent of instructor. See C-L: Dance 188S; also C-L: Interdisciplinary Course 188S. One course. *Dickinson, Mellown, and R. Ward*

Interdisciplinary Course 170. Romanticism in the Arts. See C-L: Music 170. One course. *Applewhite, B. Ward, and R. Ward*

DANCE (DAN)

Associate Professor Wray, *Coordinator of the Dance Program*; Part-time Instructors Arnold, Dorrance, and Richard; Artists-in-Residence Davis, Desmond, and Dickinson

Activity and theory courses are offered for undergraduate men and women who have special interest in dance as an art form. Although no major in dance exists, Program II provides the possibility of interdisciplinary study of dance in relation to other art forms. Summer courses are available through the American Dance Festival. All dance activity courses (1-99) are offered only on the pass/fail basis.

Activity Courses

60. Beginning Modern Dance I. Modern dance as an art form: techniques, choreography, history, philosophy, and aesthetics. Half course. *Staff*

61. Beginning Modern Dance II. Prerequisite: Dance 60. Half course. *Staff*

62. Intermediate Modern Dance I. Prerequisite: Dance 61. Half course. *Staff*

63. Intermediate Modern Dance II. Prerequisite: Dance 62. Half course. *Staff*

- 64. Advanced Modern Dance.** Prerequisite: Dance 63. Half course. *Staff*
- 65. Beginning Improvisation.** Prerequisite: Dance 61. Half course. *Staff*
- 70. Ballet I.** Prerequisite: one year of training in the strict classical form. Half course. *Dorrance*
- 71. Ballet II.** Prerequisites: two years of ballet and consent of instructor. Half course. *Dorrance*
- 79. African Dance Technique.** Half course. *Davis*
- 80. Individual Dance Program.** Half course. *Staff*
- 81. Repertory.** The study of choreography and performance through participation in the mounting of a dance work from inception through rehearsal to performance. Prerequisite: consent of instructor. Variable credit. *Staff*

Theory Courses

- 131. History of Dance.** Emphasis on form, structure, and content related to culture of eras. One course. *Dickinson*
- 131S, 132S. History of Dance.** Emphasis on form, structure, and content related to culture of eras. Two courses. *Wray*
- 133. History of Black Dance.** A survey of black dance in Africa, America, and the Caribbean during the eighteenth, nineteenth, and twentieth centuries. One course. *Davis*
- 135, 136. Principles of Contemporary Dance Composition.** Prerequisites: Dance 60, 61, and 62 or consent of instructor. Two courses. *Desmond*
- 181. Special Topics.** Content to be determined by the instructor. Prerequisite: consent of instructor. One course. *Desmond*
- 183. Dance and Dance Music, 1600-1800.** Court, folk, and social dances from Europe, emphasizing the relationship of dance to music. Music or dance skills are useful, but not required. One course. *Troxler and Wittman*
- 188S. The Diaghilev Ballet, 1909-1929.** The Diaghilev Ballet as a focal point for modernist movements in literature and related arts and a revitalizing force for ballet that brought together choreographers Fokine, Nijinsky, Massine, Nijinska; composers Stravinsky, Ravel, Debussy, Satie; artists Bakst, Benois, Picasso, Braque. Prerequisite: junior or senior standing or consent of the instructor. C-L: Institute of the Arts 188S and Interdisciplinary Course 188S. One course. *Dickinson, Mellown, and R. Ward*
- 191, 192. Independent Study.** Two courses. *Staff*

Courses Currently Unscheduled

- 134. Creative Movement for Children**
- 139. Movement Connotations**
- 197. Aesthetics of Twentieth-Century Dance**
- 198. Sacred Dance**

FILM AND VIDEO

Assistant Professor Gaines, *Chairman of the Film and Video Committee*

The courses are described in the listings of the specified departments.

Anthropology

- 110. Advertising and Society. *O'Barr*
- 118S. The Language of Advertising. *O'Barr*

Comparative Literature

- 177. Film Theory. *Gaines*
- 185. Psychoanalysis, Literature, and Film. *Gaines*

Drama/English

- 65/81. Introduction to Film. *Clum or Gaines*
- 66/82. The American Film. *Clum or Gaines*
- 111S/107S. Playwriting I. *Ball or Clum*
- 112S. Playwriting II. *Ball*
- 126/188. Literature and the Film. *Clum or Gaines*

English

- 189S. Special Topics in Film. *Clum or Gaines*

French

- 170. Film and the French Novel. *Jameson*

History

- 127S. History and the Visual Image. *Bergquist, TePaske, and Wood*

Institute of the Arts

- 181S. Dance: Special Topics. *Desmond*

Political Science

- 153, 154. Politics and the Media of Mass Communication. *Paletz*
- 203S. Politics and the Media of Mass Communication. *Paletz*

Public Policy Studies

- 176S. American Communities: a Photographic Approach. *Harris*
- 178S. Visual Language and Policy Choice. *Cole, Harris, and Payne*

Sociology

- 170. Mass Communication. *Smith*
- 182. The Media in Comparative Perspective. C-L: Interdisciplinary Course 180 and Political Science
- 180. *Smith*

Interdisciplinary Courses (IDC)

21S. Freshman Seminar: Topics in Medieval Studies. Topics will vary according to instructor; perspectives from history, literature, religion, philosophy, and the arts. C-L: Medieval and Renaissance Studies. One course. *Staff*

22S. Freshman Seminar: Topics in Renaissance Studies. Topics will vary according to instructor; perspectives from history, literature, religion, philosophy, and the arts. C-L: Medieval and Renaissance Studies. One course. *Staff*

98. Introduction to the Neurosciences. Fundamentals of the field, especially as it relates to behavior. Provides the background for Interdisciplinary Course 200 and Psychology 200. Designed for the general student interested in the neurosciences. One course. *R. Erickson and staff*

101, 102. Introduction to the Civilizations of Southern Asia. Hindu, Islamic, and Buddhist foundations; impact of the West; and emergence of the modern nation-states of southern Asia. 101: traditional Hindu civilization and Islamic impact on southern Asia. 102: Western influences and the development of modern societies and states in southern Asia. C-L: Anthropology 101, 102; Comparative Area Studies; History 193, 194; and Religion 160, 161. Two courses. *Lawrence and staff*

103. An Introduction to Women's Studies. Gender roles, their place in American culture, and the twentieth-century feminist movement. Use of the perspectives of the social sciences, the natural sciences, and the humanities. Emphasis on integrating the study of women, women's history, experience, and modes of expression into the traditional disciplines. C-L: Women's Studies. One course. *O'Barr and staff*

107S, 108S. Science, Technology, and Human Values. Open to seniors in the Science, Technology, and Human Values Program and to other seniors if space is available. Prerequisite: consent of instructor. Credit by arrangement: the pair, or either 107S or 108S, may be taken for one course credit. Two half courses or one course. *Roland and staff*

109. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy. C-L: Anthropology 109, Comparative Area Studies, History 109, Political Science 160, Religion 156, and Sociology 175. One course. *Staff*

111. Introduction to Linguistics. C-L: Anthropology 107, English 111, and Linguistics. One course. *Staff*

119. Current Topics in Linguistics. C-L: Anthropology 112, English 119, and Linguistics. One course. *Staff*

120. Perspectives on Food and Hunger. Issues of food and hunger from an interdisciplinary perspective. Lectures present analytic approaches from the natural sciences, social sciences, and the humanities. C-L: Comparative Area Studies. Half course. *Johns*

120A. Perspectives on Food and Hunger. See Interdisciplinary Course 120. Lectures, weekly discussion meetings, and individual research. C-L: Comparative Area Studies and Political Science 176A. One course. *Johns*

120B. Perspectives on Food and Hunger. See Interdisciplinary Course 120. Lectures, community internship project, and discussion meetings. C-L: Comparative Area Studies and Political Science 176B. One course. *Johns*

124. Human Development. Biological, behavioral, and cultural perspectives and approaches. Evaluation of competing paradigms. Taught by multidisciplinary team. C-L: Human Development. One course. *Eckerman, Klopfer, and Stack*

125. Strategies of Comparative Analysis. Comparative research and analysis in the social sciences and the humanities: strengths and weaknesses of cross-cultural comparison as developed by sociologists, historians, political scientists, anthropologists, and specialists in comparative literature and religion. C-L: Anthropology 125, Comparative Area Studies, History 137, Political Science 125, and Sociology 125. One course. *Staff*

139. Marxism and Society. See C-L: Anthropology 139; also C-L: Education 139, History 186, and Sociology 139. One course. *Staff*

150S. Comparative Area Studies Senior Seminar. Open to seniors majoring in Comparative Area Studies and to other seniors if space is available. Prerequisite: consent of instructor. One course. *Gereffi*

153S. The Insurgent South. Prerequisite: consent of instructor. C-L: History 153S. One course. *Goodwyn*

155. Comparative Perspectives on Literature and Social Change: From Plantation to City. See C-L: Comparative Literature 155; also C-L: Comparative Area Studies. One course. *Willis*

160S. Topics in Medieval and Renaissance Studies. Interdisciplinary perspectives from the arts, history, literature, philosophy, and religion. For juniors and seniors and Medieval and Renaissance Studies majors, or with consent of instructor. Prerequisite: one course in Medieval and/or Renaissance periods. C-L: Medieval and Renaissance Studies. One course. *Staff*

162, 163. Introduction to Islamic Civilization. Extensive survey of Muslim peoples and institutions. 162: the Middle Eastern origins and cultural attainments of

medieval Islam. 163: modern developments and global features of the Islamic world. C-L: Anthropology 147, 148; Comparative Area Studies; History 101G, 102G; and Religion 162, 163. Two courses.

Lawrence and staff

164. History and Religions of North Africa. See C-L: Religion 164; also C-L: History 187. One course. *Lawrence*

170. Romanticism in the Arts. The literary, visual, and musical arts of the nineteenth century examined in their historical and theoretical context. Manifestations in the works of Goethe, Wordsworth, Balzac; Friedrich, Delacroix, Turner; Beethoven, Schumann, Berlioz; and others. Developments and continuities in sensibility and style. Guest lecturers, coordinated performances. C-L: Music 170. One course. *Applewhite, B. Ward, and R. Ward*

180. Psychosocial Aspects of Human Development. See C-L: Psychology 130; also C-L: Human Development and Sociology 169. One course. *Martin Lakin and Maddox*

181S. Art and Its Making. Prerequisites: junior or senior standing and consent of instructor. C-L: Institute of the Arts 181S and Psychology 181S. One course. *Kremen*

182. Media in Comparative Perspective. Impact of mass media outside the United States. Cross-national comparisons of media content, audiences, and control. Relationships of governments to media and media policies. International flow of media materials and their cross-national impact. C-L: Comparative Area Studies, Political Science 180, and Sociology 182. One course. *Smith*

184. An Introduction to Canada and Canadian Issues. A survey of the main geographic, historical, economic, governmental, and political facets that have shaped modern Canada and an examination of persistent and current issues facing the Canadian nation. C-L: Canadian Studies, Comparative Area Studies, Economics 184, History 184, Political Science 184, and Sociology 184. One course. *Leach*

188S. The Diaghilev Ballet, 1909-1929. Prerequisite: junior or senior standing or consent of instructor. See C-L: Dance 188S; also C-L: Institute of the Arts 188S. One course. *Dickinson, Mellow, and R. Ward*

189. The Americas: a Survey of the Forces Shaping the Hemisphere. See C-L: History 189; also C-L: Anthropology 189, Comparative Area Studies, Political Science 110, and Sociology 189. One course. *Bergquist*

190. Research Apprenticeship in Human Development. Part of the Undergraduate Program in Human Development. Supervised work may be in a laboratory, project, or organizational setting. Prerequisite: consent of instructor. C-L: Human Development. One course. *Staff*

191S. Senior Seminar in Human Development. Prerequisite: consent of instructor. C-L: Human Development. One course. *Staff*

200. Advanced Behavioral Neuroscience I. Basic neuroanatomy and neurophysiology, physiology of the neuron and neural networks, neurotransmitter functions, sensory and motor systems. Prerequisite: Interdisciplinary Course 98. C-L: Psychology 200. One course. *N. Cant and staff*

201. Advanced Behavioral Neuroscience II. Integrative activities of the nervous system; sensory-motor relationships, neuroendocrine relationships, emotion and motivation, sleep, learning and memory, diseases of the nervous system and their psychological correlates. Prerequisite: Interdisciplinary Course 200 or Psychology 200. C-L: Psychology 201. One course. *R. Erickson and staff*

211. Colloquium in Feminist Theory and the Disciplines. An examination of gender as an analytic category in classical and contemporary social, political, and literary theory and of the evolution of feminism as a distinct perspective. Emphasis on both the substantive and methodological contributions of feminist scholarship to all disciplines and on the research frontiers created by its use. C-L: Women's Studies. One course. *Staff*

234S. Political Economy of Development: Theories of Change in the Third World. See C-L: Political Science 234S; also C-L: Anthropology 234S, Comparative Area Studies, History 234S, and Sociology 234S. One course. *Bergquist, Fox, Gereffi, Smith, Trouillot, and Valenzuela*

282S. Canada. Topics vary each semester; recent perspectives have included nationalism, Canadian-American relations, regionalism in the Maritimes and the West, and cross-border environmental issues, among others. C-L: Anthropology 282S, Canadian Studies, Comparative Area Studies, History 282S, Political Science 282S, and Sociology 282S. One course. *Leach*

COURSES CURRENTLY UNSCHEDULED

99. Perspectives in Archaeology

104. Public Policy and the Marine Environment

105. Austrian Culture

Italian

For courses in Italian, see Romance Languages.

Japanese

For courses in Japanese, see Asian and African Languages.

Judaic Studies—Cooperative Program at Duke and UNC-Chapel Hill

Professor E. Meyers (religion), *Director*; Professor Wintermute (religion); Associate Professors Alt (Germanic languages and literature), Bailey (Divinity School), Bland (religion), Halperin (religion), and C. Meyers (religion)

A program in Judaic studies may be taken as part of a major in religion or as a supplement to any other major. It may also be taken under Program II. Students are eligible for a certificate in Judaic studies after completing four courses in the program.

For descriptions of the courses consult the listings under the specified departments.

German

171. Yiddish Literature in Translation. *Alt*

181, 182. Elementary Yiddish. *Alt*

Hebrew

1, 2. Elementary Modern Hebrew. *Staff*

63, 64. Intermediate Modern Hebrew. *Staff*

191, 192, 193, 194. Independent Study. *Staff*

Religion

50. The Old Testament. *C. Meyers, E. Meyers, Peters, and Wintermute*

51. Introduction to Judaic Civilization. *Bland or E. Meyers*

100. Selected Studies in the Bible: Pentateuch. *Staff*

101. Selected Studies in the Bible: Prophets. *Staff*

102. Selected Studies in the Bible: Writings. *Staff*

105. Theology of the Old Testament. *Wintermute*

- 109. Women in the Biblical Tradition: Image and Role. *C. Meyers*
- 110. Archaeology and Art of the Biblical World. *C. Meyers or E. Meyers*
- 115-116. Introduction to Biblical Hebrew. *Bailey*
- 131D. Principles of Archaeological Investigation. *C. Meyers or E. Meyers*
- 132D. Palestine in Late Antiquity. *E. Meyers*
- 133. Foundations of Post-Biblical Judaism. *E. Meyers*
- 134. Jewish Mysticism. *Bland*
- 135. Jewish Religious Thought. *Bland*
- 136. Contemporary Jewish Thought. *Bland or E. Meyers*
- 195B, 196B. Junior-Senior Seminars. *Staff*
- 207, 208. Intermediate Biblical Hebrew. *Staff*
- 220. Rabbinic Hebrew. *E. Meyers or staff*
- 221. Readings in Hebrew Biblical Commentaries. *Bland*
- 238. Jewish Responses to Christianity. *Bland*
- 244. The Archaeology of Palestine in Hellenistic-Roman Times. *C. Meyers or E. Meyers*

Opportunities for independent study are offered in the Department of Religion under 191, 192, 193, 194. Procedures for registration and applications are available in 118 Gray Building.

Special attention is directed to those courses in New Testament which are relevant to the study of Rabbinic Judaism, i.e., Religion 106, 107, 108, and 111. A list of appropriate courses at the University of North Carolina at Chapel Hill is available in 230C Gray Building, Duke University, and in 101 Saunders Hall, University of North Carolina, Chapel Hill.

Latin

For courses in Latin, see Classical Studies.

Linguistics

Students interested in the study of language as part of their undergraduate program or as preparation for graduate work in linguistics should consult the instructors of the courses listed below or Associate Professor Butters, Chairman, Committee on Linguistics, 138 Social Sciences. Students may concentrate in linguistics through Program II. For descriptions of the following courses see the listings of the specified departments:

Anthropology

- 107. Introduction to Linguistics. *Staff*
- 112. Current Topics in Linguistics. *Staff*
- 116. Language, Ethnicity, and New Nations. *Apte*
- 118S. The Language of Advertising. *O'Barr*
- 119. Language, Culture, and Society. *Apte or Weller*
- 211S. Ethnography of Communication. *Apte, Dominguez, Fox, O'Barr, Quinn, Smith, Trouillot, or Weller*

English

- 111. Introduction to Linguistics. *Staff*
- 112. English Historical Linguistics. *Butters or Nygard*
- 115. Present-Day English. *Butters or Nygard*
- 118. The Teaching of Composition, Grammar, and Literature in the Secondary School. *Page*
- 119. Current Topics in Linguistics. *Staff*
- 208. History of the English Language. *Butters or Nygard*
- 209. Present-Day English. *Butters or Nygard*

French

- 120. Language, Computers, and Formal Intelligence. *Thomas*
- 131S. French in the New World. *Hull*
- 210. The Structure of French. *Hull*
- 211. History of the French Language. *Hull*

German

- 205, 206. Middle High German. *Westphal-Wihl*
- 216. History of the German Language. *Westphal-Wihl*

Interdisciplinary Courses

111. Introduction to Linguistics. *Staff*
119. Current Topics in Linguistics. *Staff*

Philosophy

103. Symbolic Logic. *Brandon or Posy*
109. Philosophy of Language. *Posy*

Psychology

134. Psychology of Language. *Day*
220S. Psycholinguistics. *Day*

Russian

- 185S. Introduction to Slavic Linguistics. *Andrews*
186S. History of the Russian Language. *Pugh*

Spanish

- 119S. Structure of Spanish. *Wheeler*
210. History of the Spanish Language. *Garci-Gómez*

Management Sciences (MS)

Professor Keller, *Chairman*; Professor Dickens, *Director of Undergraduate Studies*

The courses listed below are offered for undergraduates by the Fuqua School of Business. They are professional school courses and hence *do not count for the distributional requirements*. They fall within the limit of six professional school courses which may count for an undergraduate degree from Trinity College. A major is not offered to undergraduate students.

Taking a selection of these courses may be helpful in preparation for graduate education in business and law and may provide the liberal arts, science, and engineering student an advantage in placement. Students planning to take the accounting concentration in the Master of Business Administration Program of the Fuqua School of Business either following graduation or in the undergraduate-professional combination program should take Management Sciences 53 and 137 at a minimum.

The Director of Undergraduate Studies is available for consultation with undergraduates.

53. Introductory Financial Accounting. The accounting model of the firm and transactions analysis. Topics include the procedures used to process accounting data, issues in asset valuation and income determination, and financial statement analyses. Prerequisite: sophomore standing. One course. *Staff*

114. Decision Models. Development and use of models in the analysis of decision problems. Topics include linear programming and decision analysis; approaches to the solution of complex problems. Prerequisite: Mathematics 31. One course. *Staff*

120. Analysis of Organizational Behavior. Organizations and the behavior of individuals within organizations with emphasis on environmental, structural, and human factors. Topics include socialization, work motivation, decision making, leadership, power, control, small group behavior, strategy formation, organization design, organizational culture, and effects of technology. Prerequisite: junior standing. One course. *Staff*

137. Managerial Accounting. The use of accounting information by management in short-term planning, control, and decision making in business enterprises. Cost accumulation, cost analysis, cost estimation, the development of standards, introduction to budgeting, and short-run decisions. Prerequisite: Management Sciences 53. One course. *Staff*

151. Investment Management. Problems of selecting a portfolio of investments emphasizing the economics of the markets and the tools of analysis. Prerequisites: Economics 138 or equivalent and junior standing. One course. *Staff*

154. Finance. Problems of financial management of the firm. Cash management, receivables management, short-term financial planning, cost of capital, capital budgeting, dividend policy, lease analysis, and long-term financial planning. Prerequisite: junior standing. One course. *Staff*

161. Marketing Management. The role of the marketing function in business; product planning, price, promotion, and distribution as elements of a total marketing mix. Formal models in solving the marketing mix problem of the firm. Prerequisite: junior standing. One course. *Staff*

171. Production and Operations Management. Issues in the design, operation, and control of the process by which goods are manufactured and services delivered. Topics include work-force management, production planning and materials management, capacity and technology choice, and the combination of operations choices into a coherent strategy. Prerequisite: junior standing. One course. *Staff*

193, 194. Independent Study. Directed reading and research. Open only to qualified seniors with consent of instructor and Director of Undergraduate Studies. Credit to be arranged. *Staff*

199. Special Topics. Prerequisites: junior or senior standing and consent of instructor. One course. *Staff*

Marine Sciences—The University Program

Professor Costlow (zoology), *Director*; Professor Ramus (botany), *Assistant Director for Academic Programs*; Associate Professor Forward (zoology), *Director of Undergraduate Student Affairs*; Professors Barber (botany and zoology), Gutknecht (physiology), McClay† (zoology), Pilkey* (geology), and Searle† (botany); Associate Professors C. Bonaventura (physiology), J. Bonaventura (physiology), Johnson (geology), Sullivan (biochemistry), and Sutherland (zoology); Professor Emeritus Bookhout (zoology); Research Associate Professor Kirby-Smith (Marine Laboratory); Research Assistant Professors Brouwer and Rittschof (Marine Laboratory)

The interdisciplinary program in marine sciences provides students with a unique opportunity to live and study at the Duke University Marine Laboratory for a full academic semester—fall or spring or during the summer terms. The program emphasizes small class size, independent study, and integrated classroom, laboratory, and field experience. Students have daily access to modern scientific equipment, a specialized library, and the surrounding natural marine environment. Participation in both the spring and fall semesters is possible for all majors with appropriate preparation.

The fall and spring semesters are offered primarily for juniors and seniors. Students may choose from two curricular options. Option 1: the student enrolls in two courses (one of which is generally required as part of the program; one selected by the student); two seminars (a selection is generally available); and independent study. Option 2: as option 1, except the student does not enroll in independent study, but enrolls in three courses. Students are encouraged to choose the first option during either semester.

Duke University students wishing to apply to the fall semester or the spring semester must submit an application form, together with the written approval of their

*Spring only.

†Summer only.

faculty adviser, to the Admissions Office, Duke University Marine Laboratory, Beaufort, North Carolina 28516, prior to Duke's registration period for the desired semester. Students will be notified of the action of the admissions committee shortly thereafter. Applications received after Duke's registration period for the desired semester will be considered if space is available.

The summer curriculum, taught in three five-week terms, includes a rich assortment of courses in the natural sciences. Attention is directed to the relatively new introductory course in marine biology (Biology 10L), designed to fulfill the empirical natural science requirement for humanities or social sciences majors at Duke.

Applications for summer courses must be accompanied by a current academic transcript (in those cases where students are applying to courses numbered 100 or higher) and should be submitted by the end of March to the address indicated above. (Thereafter, applications will be considered if space is available.) Duke students must submit the written approval of their faculty adviser.

A number of summer tuition scholarships are available on a competitive basis. Please consult the *Bulletin of Duke University: Marine Laboratory* for specific requirements and deadline dates, or contact the Admissions Office of the Marine Laboratory.

The following courses are described in the listings of the specified departments. See the *Bulletin of Duke University: Marine Laboratory* for the current schedule of courses.

SUMMER COURSES AT BEAUFORT

Marine Biology. (Biology 10L.) One course. *Kirby-Smith*

Introduction to Biological Oceanography. (Botany 114L or Zoology 114L.) One and one-half courses. *Staff*

Physiology of Marine Animals. (Zoology 150L/250L.) One course. *Forward*

Marine Invertebrate Zoology. (Zoology 176L.) One and one-half courses. *Bookhout*

Independent Study. (Botany 191, 192 or Zoology 191, 192.) Credits to be arranged. *Staff*

Marine Policy. (Public Policy Studies 195S.) One course. *Orbach (visiting summer faculty)*

Marine Ecology. (Zoology 203L.) One and one-half courses. *Sutherland*

Primary Productivity in the Seas. (Botany 215L or Zoology 215L.) One course. *Barber and Ramus*

Barrier Island Ecology. (Botany 218 or Forestry and Environmental Studies 218.) One and one-half courses. *Leatherman (visiting summer faculty)*

Benthic Marine Algae. (Botany 219L.) One course. *Searles*

Tropical Seaweeds. (Botany 263L.) Half course. *Searles*

Marine Invertebrate Zoology. (Zoology 274L.) One and one-half courses. *Barnes (visiting summer faculty)*

Invertebrate Developmental Biology. (Zoology 278L.) One and one-half courses. *McClay and visiting staff*

Advanced Topics in Geology: Continental Margin Sedimentation. (Geology 295S.) One and one-half courses. *Johnson and visiting staff*

Behavior and Ecology of Fishes. (Zoology 295S.) One course. *Staff*

FALL COURSES AT BEAUFORT

Analysis of Marine Ecosystems. (Botany 167 or Zoology 167.) Prerequisites: introductory biology and chemistry. One course. *Barber*

Organization of Marine Communities. (Zoology 169L.) Students may not receive credit for both Zoology 103L and 169L. Prerequisites: introductory biology and Mathematics 31. One course. *Sutherland*

Independent Study. (Botany 191, Zoology 191, Biochemistry 209, Physiology 210, or as listed under the student's major department.) For junior and senior majors with consent of Director of Undergraduate Studies and supervising instructor. One course. *Staff*

Light in the Sea. (Botany 195S.) Half course. *Ramus*

Membrane Physiology. (Physiology 219S.) Half course. *Gutknecht*

Macromolecules, Ecology, and Evolution. (Biochemistry 245L.) The structure and function of protein and nucleic acid molecules with particular emphasis on the application of molecular techniques to questions in ecological, systematic, and evolutionary theory. One course. *Sullivan*

Natural History of Coastal Marine Systems. (Botany 295S or Zoology 295S.) Half course. *Kirby-Smith*

Marine Animal Navigation. (Zoology 295S.) Half course. *Forward*

SPRING COURSES AT BEAUFORT

Introduction to Biological Oceanography. (Botany 114L or Zoology 114L.) Not open to students who have had Geology 53 or Botany 53. Prerequisite: introductory biology. One course. *Barber and Ramus*

Physiology of Marine Animals. (Zoology 150L.) Prerequisites: introductory biology and chemistry. One course. *Forward*

Independent Study. (Botany 192, Geology 192, Zoology 192, Biochemistry 210, Physiology 210, or as listed under the student's major department.) For juniors and seniors with consent of Director of Undergraduate Studies and supervising instructor. One course. *Staff*

Beach and Island Geological Processes. (Geology 196S.) Half course. *Pilkey*

Physical Oceanography. (Geology 203.) Prerequisite: Physics 41 or 51. Half course. *Johnson*

Geological Oceanography. (Geology 205S.) One course. *Johnson*

Adaptations of Organisms to the Marine Environment. (Biochemistry 220S.) Half course. *C. Bonaventura or J. Bonaventura*

Marine Fishes: Selected Topics. (Zoology 296S.) Half course. *Forward and Sullivan*

Experimental Ecology of the Marine Intertidal Zone. (Zoology 296S.) Half course. *Sutherland*

COURSES CURRENTLY UNSCHEDULED

Public Policy and the Marine Environment. (Interdisciplinary Course 104.)

Phytoplankton. (Botany 115L.)

Chemical Oceanography. (Chemistry 204.)

Marine Biochemistry and Genetics. (Biochemistry 266S.)

Comparative and Evolutionary Biochemistry. (Biochemistry 276L.)

Human Impact on Biogeochemical Cycles. (Botany 296S or Zoology 296S.)

Mathematics (MTH)

Professor Allard, *Chairman*; Associate Professor R. Hodel, *Director of Undergraduate Studies*; Instructor Blake, *Supervisor of Freshman Instruction*; Professors Beale, DiPerna, Griffiths, Reed, Rose, Schaeffer, Shoenfield, Warner, and Weisfeld; Associate Professors Burdick, Kitchen, Kraines, Lawler, Moore, Pardon, Schonbek, Scoville, and Smith; Assistant Professors Cheney, Nance, Schoen, Stern, and Sylvester; Professors Emeriti Carlitz, Dressel, Elliott, Hickson, Murray, and Roberts; Adjunct Professor Chandra; Instructor Bookman; Part-time Instructor M. Hodel

9-10. Preparatory and Precalculus Mathematics. A two-semester skills course for students who need to review topics in high school mathematics while covering the material in Mathematics 19. Students whose Mathematics SAT scores are 500 or below, or whose CEB Mathematics Level I or II Achievement Test scores are 480 or below, need this two-semester course before taking Mathematics 31. No credit for Mathematics 9 without successful completion of Mathematics 10. Not open to students who take Mathematics 19. Prerequisite for 10: Mathematics 9. One course. *Staff*

19. Precalculus Mathematics. Selected topics in algebra, trigonometry, and analytic geometry. Students with achievement scores in mathematics below 550 need this skills course before taking Mathematics 31. Not open to students who take Mathematics 10. Prerequisite: two units of college preparatory mathematics. One course. *Staff*

31. Introductory Calculus I. Functions, limits, continuity, trigonometric functions, techniques and applications of differentiation, indefinite and definite integrals, the fundamental theorem. One course. *Staff*

32. Introductory Calculus II. Transcendental functions, techniques and applications of integration, indeterminate forms, improper integrals, infinite series. Not open to students who have had Mathematics 36. Prerequisite: Mathematics 31 or 33. One course. *Staff*

31P, 32P. Preceptorial. Elective preceptorial for students enrolled in Mathematics 31 and 32. *Staff*

31X, 32X. Introductory Honors Calculus I and II. Similar to Mathematics 31 and 32, but faster paced and more challenging. Open to students who score at least 750 on the SAT Mathematics Aptitude Test. Two courses. *Staff*

33, 34. Introductory Calculus with Digital Computation. Same as 31, 32 but these courses meet one additional hour per week to discuss the solution of calculus problems using the computer. No programming experience required. Prerequisites for 34: Mathematics 33 or 31 and consent of instructor. Two courses. *Staff*

36. Calculus for the Social Sciences. Selected topics from Mathematics 32 and 103 including logarithm and exponential functions, techniques and applications of integration, series, partial differentiation and Lagrange multipliers, double integrals. (Not open to students who have had Mathematics 32. Satisfies the prerequisites for Mathematics 104 and 117 but not 103 and other upper level courses.) Prerequisite: Mathematics 31 or 33. One course. *Staff*

53. Basic Statistics. Statistical concepts involved in making inferences, decisions, and predictions from data. Techniques not emphasized. Not open to students who have had Economics 138, Political Science 138, Psychology 117, Public Policy Studies 112, or Sociology 133. One course. *Staff*

103. Intermediate Calculus. Partial differentiation, multiple integrals, topics in differential and integral vector calculus. Prerequisite: Mathematics 32 or 34. One course. *Staff*

103P. Preceptorial. Elective preceptorial for students enrolled in Mathematics 103 or 103X. *Staff*

103X, 104X. Honors Intermediate Calculus and Linear Algebra. Similar to Mathematics 103, 104, but more theoretical. Students who have taken 31X, 32X are encouraged to enroll. Students continuing from 103X should take 104X rather than 104. Two courses. *Staff*

104. Linear Algebra and Applications. Systems of linear equations and elementary row operations, Euclidean n -space and subspaces, linear transformations and matrix representations, Gram-Schmidt orthogonalization process, determinants, eigenvectors and eigenvalues; applications. Prerequisite: Mathematics 32, 34, or 36. One course. *Staff*

104P. Preceptorial. Elective preceptorial for students enrolled in Mathematics 104 or 104X. *Staff*

105. Intermediate Calculus with Digital Computation. Same as 103, but this course meets one additional hour per week to discuss the solution of calculus problems using the computer. The course is a continuation of Mathematics 33, 34. Prerequisites: Mathematics 34 or 32 and the equivalent of Computer Science 51. One course. *Staff*

106. Linear Algebra with Digital Computation. Same as 104, but with additional applications of eigenvalues and eigenvectors. Packaged computer programs will be used extensively. No programming experience required. Prerequisite: Mathematics 103 or 105. One course. *Staff*

111. Applied Mathematical Analysis I. First and second order differential equations with applications; matrices, eigenvalues, and eigenvectors; linear systems of differential equations; Fourier series and applications to partial differential equations. Intended primarily for engineering and science students with emphasis on problem solving. Not open to students who have had Mathematics 131. Prerequisite: Mathematics 103. One course. *Staff*

114. Applied Mathematical Analysis II. Boundary value problems, complex variables, Cauchy's theorem, residues, Fourier transform, applications to partial differential equations. Not open to students who have had Mathematics 230. Prerequisites: Mathematics 111 or 131, and 103 and consent of instructor. One course. *Staff*

117. Introduction to Statistical Methods. Emphasis on the classical techniques of hypothesis testing and point and interval estimation, using the binomial, normal, t , F , and chi square distributions. Not open to students who have had Mathematics 136. Prerequisite: Mathematics 103 (may be taken concurrently) or Mathematics 36 or consent of instructor. One course. *Staff*

123S. Geometry. Euclidean geometry, inversive and projective geometries, topology (Möbius strips, Klein bottle, projective space), and non-Euclidean geometries in two and three dimensions. Prerequisite: Mathematics 32 or 34, or consent of instructor. *Staff*

124. Combinatorics. Permutations and combinations, generating functions, recurrence relations; topics in enumeration theory, including the Principle of Inclusion-Exclusion and Polya Theory; topics in graph theory, including trees, circuits, and matrix representations; applications. Prerequisites: Mathematics 104 or 106 or consent of instructor. One course. *Staff*

126. Introduction to Linear Programming and Game Theory. Fundamental properties of linear programs; linear inequalities and convex sets; primal simplex method,

duality; integer programming; two-person and matrix games. Prerequisites: Mathematics 32 or 34 and 103 and 104 or consent of instructor. One course. *Staff*

128. Number Theory. Divisibility properties of integers, prime numbers, congruences, quadratic reciprocity, number-theoretic functions, simple continued fractions, rational approximations. Prerequisite: Mathematics 32 or 34 or consent of instructor. One course. *Staff*

131. Elementary Differential Equations. Solution of differential equations of elementary types; formation and integration of equations arising in applications. Not open to students who have had Mathematics 111. Prerequisite: Mathematics 103; co-requisite: Mathematics 104. One course. *Staff*

132S. Qualitative Theory of Ordinary Differential Equations. Qualitative behavior of general systems of ordinary differential equations, with application to biological and ecological systems, oscillations in biochemistry, electrical networks, and the theory of deterministic epidemics. Prerequisite: Mathematics 131 or 111 or consent of instructor. One course. *Staff*

135. Probability. Probability models, random variables with discrete and continuous distributions. Independence, joint distributions, conditional distributions. Expectations, functions of random variables, central limit theorem. Prerequisite: Mathematics 103. One course. *Staff*

136. Statistics. Sampling distributions, point and interval estimation, maximum likelihood estimators. Tests of hypotheses, the Neyman-Pearson theorem. Bayesian methods. Not open to students who have had Mathematics 117. Prerequisites: Mathematics 104 and 135. One course. *Staff*

139. Advanced Calculus I. Algebraic and topological structure of the real number system; rigorous development of one-variable calculus including continuous, differentiable, and Riemann integrable functions and the Fundamental Theorem of Calculus; uniform convergence of a sequence of functions. Not open to students who have had Mathematics 203. Prerequisite: Mathematics 103. One course. *Staff*

140. Advanced Calculus II. Infinite series; topics in multivariable calculus such as multiple integrals, differentiation of transformations, implicit function theorems, differential forms. Not open to students who have had Mathematics 203. Prerequisite: Mathematics 104 and 139. One course. *Staff*

140S. Advanced Calculus II. Same as Mathematics 140, but offered as a seminar. One course. *Staff*

150. Topics in Mathematics from a Historical Perspective. Content of course determined by instructor. Prerequisite: Mathematics 139 or 203 or consent of instructor. One course. *Staff*

150S. Topics in Mathematics from a Historical Perspective. Same as Mathematics 150, but offered as a seminar. One course. *Staff*

160. Mathematical Numerical Analysis. Zeros of functions; polynomial interpolation and splines; numerical integration and differentiation; applications to ordinary differential equations; numerical linear algebra; error analysis; extrapolation and acceleration. Mathematics 160 or 221, but not both, may count toward the major requirements. Prerequisites: Mathematics 103 and 104 and knowledge of an algorithmic programming language; or consent of instructor. One course. *Staff*

160S. Mathematical Numerical Analysis. Same as Mathematics 160, but offered as a seminar. One course. *Staff*

171S. Elementary Topology. Introduction to graph theory, including the Königsberg bridge problem and four color problem; metric spaces and topological spaces; basic topological properties including compactness and connectedness; Brouwer fixed point theorem for $n=2$, classification of compact, connected, 2-manifolds. Prerequisites: Mathematics 103 and 104. One course. *Staff*

187. Introduction to Mathematical Logic. Propositional calculus; predicate calculus. Gödel completeness theorem, applications to formal number theory, incompleteness theorem, additional topics in proof theory or computability. Prerequisites: Mathematics 103 and 104 or Philosophy 103. One course. *Staff*

191, 192. Independent Study. Directed reading and research. Admission by consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Same as 191, 192, but for seniors. Two courses. *Staff*

196S. Seminar in Mathematical Model Building. Real models, mathematical models, axiom systems as used in model building, deterministic and stochastic models, linear optimization, competition, graphs and networks, growth processes, evaluation of models. Term project: model of a nonmathematical problem. Prerequisites: Mathematics 103 and 104. One course. *Staff*

197S. Seminar in Mathematics. Intended primarily for juniors and seniors majoring in mathematics. Content of course determined by instructor. Prerequisites: Mathematics 103 and 104. One course. *Staff*

198S, 199S. Honors Seminar in Mathematics. Content of course determined by instructor. Prerequisite: consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

For Seniors and Graduates

200. Introduction to Algebraic Structures I. Laws of composition, groups, rings; isomorphism theorems; axiomatic treatment of natural numbers; polynomial rings; division and Euclidean algorithms. Prerequisite: Mathematics 104 or equivalent. One course. *Staff*

201. Introduction to Algebraic Structures II. Vector spaces, matrices and linear transformations, fields, extensions of fields, construction of real numbers. Prerequisite: Mathematics 200 or equivalent. One course. *Staff*

203. Basic Analysis I. Topology of R^n , continuous functions, uniform convergence, compactness, infinite series, theory of differentiation, and integration. Not open to students who have had Mathematics 139. Prerequisite: Mathematics 104. One course. *Staff*

204. Basic Analysis II. Inverse and implicit function theorems, differential forms, integrals on surfaces, Stokes' theorem. Not open to students who have had Mathematics 140. Prerequisite: Mathematics 203. One course. *Staff*

205. Topology. Elementary topology, surfaces, covering spaces, Euler characteristic, fundamental group, homology theory, exact sequences. One course. *Staff*

206. Differential Geometry. Geometry of curves and surfaces, the Serret-Frenet frame of a space curve, the Gauss curvature, Cadazzi-Mainardi equations, the Gauss-Bonnet formula. Prerequisite: Mathematics 104. One course. *Staff*

221, 222. Numerical Analysis I, II. See C-L: Computer Science 221, 222. Two courses. *Douglas, Gallie, Patrick, Rose, or Utku*

230. Mathematical Methods in Physics and Engineering I. Heat and wave equations, initial and boundary value problems, Fourier series, Fourier transforms, potential theory. Not open to students who have had Mathematics 114. Prerequisites: Mathematics 103 and 104 or equivalents. One course. *Staff*

231. Mathematical Methods in Physics and Engineering II. Green's functions, propagators, integral equations, spectral theory on Hilbert space, Fredholm alternative, variational methods. Prerequisite: Mathematics 114 or 230. One course. *Staff*

234. Mathematics for Quantum Mechanics. Hilbert space, self-adjoint operators, the mathematical model of quantum mechanics, commutation relations, spectral analysis of Hamiltonians, time dependent scattering theory. Prerequisites: Mathematics 230 and 231 or equivalents. One course. *Staff*

235. Topics in Mathematical Physics. Group representations, perturbation theory, quantum field theory, statistical mechanics, or general relativity. Prerequisite: Mathematics 231 or equivalent. One course. *Staff*

238, 239. Topics in Applied Mathematics. Conceptual basis of applied mathematics, combinatorics, graph theory, game theory, mathematical programming, or numerical solution of ordinary and partial differential equations. Prerequisites: Mathematics 103 and 104 or equivalents. Two courses. *Staff*

240. Applied Stochastic Processes. Applications of probability theory and stochastic processes to economics and environmental science. Markoff chains, optional stopping, queuing theory, decision theory, birth and death processes, and the Monte-Carlo method. Prerequisite: Mathematics 135 or equivalent. One course. *Staff*

241. Linear Models. Geometric interpretation, multiple regression, analysis of variance, experimental design, analysis of covariance. Prerequisite: Mathematics 136 or equivalent. One course. *Staff*

242. Multivariate Statistics. Multinomial distributions, multivariate general linear model, Hotellings T^2 statistic, Roy union-intersection principle, principal components, canonical analysis, factor analysis. Prerequisite: Mathematics 241 or equivalent. One course. *Staff*

248, 249. Topics in Statistics. Analysis of variance, design of experiments, non-parametric statistics, foundations of statistical inference. Prerequisite: consent of instructor. Two courses. *Staff*

250. Introductory Mathematical Logic. First-order logic, completeness theorem, compactness theorem, introduction to recursive functions, incompleteness theorem. Prerequisite: Mathematics 187 or 200 or equivalent. One course. *Staff*

251. Set Theory I. Zermelo-Fraenkel axioms, ordinals and cardinals, models of set theory, constructible sets. Prerequisite: Mathematics 187 or 200 or equivalent. One course. *Staff*

252. Set Theory II. Forcing, large cardinals, determinateness, and other advanced topics. Prerequisite: Mathematics 251. One course. *Staff*

258, 259. Topics in Logic. Model theory, recursion theory, set theory, or other fields of logic. Prerequisite: Mathematics 250 or equivalent. Two courses. *Staff*

260. Groups, Rings, and Fields. Groups including nilpotent and solvable groups, p -groups and Sylow theorems; rings and modules including classification of modules over a PID and applications to linear algebra; fields including extensions and Galois theory. Prerequisite: Mathematics 201 or equivalent. One course. *Staff*

261. Commutative Algebra. Extension and contraction of ideals, modules of fractions, primary decomposition, integral dependence, chain conditions, affine algebraic

varieties, Dedekind domains, completions. Prerequisite: Mathematics 260 or equivalent. One course. *Staff*

268, 269. Topics in Algebra. Algebraic number theory, algebraic K -theory, homological algebra, or topological algebra. Prerequisite: Mathematics 260. Two courses. *Staff*

271. Algebraic Topology. Fundamental group and covering spaces, homology groups of cell complexes, classification of compact surfaces, the cohomology ring and Poincaré duality for manifolds. Prerequisites: Mathematics 171S and 200 or equivalents. One course. *Staff*

275. Differential Geometry. Differentiable manifolds, fiber bundles, connections, curvature, characteristic classes, Riemannian geometry including submanifolds and variations of the length integral, complex manifolds, homogeneous spaces. Prerequisites: Mathematics 204 and 260 or equivalents. One course. *Staff*

276. Topics in Differential Geometry. Lie groups and related topics, Hodge theory, index theory, minimal surfaces, Yang-Mills fields, exterior differential systems, several complex variables. Prerequisite: Mathematics 275 or consent of instructor. One course. *Staff*

277. Topics in Algebraic Geometry. Local theory: affine varieties, algebraic and topological theory of singularities. Global theory over the complex numbers: Riemann surfaces, Jacobians, Kähler manifolds, Hodge theory, theorems of Lefschetz and Kodaira. Scheme theory: schemes, duality theorems, arithmetic varieties. Prerequisite: consent of instructor. One course. *Staff*

280. Differential Analysis. Differential calculus, ordinary differential equations, flows, Lie bracket, total differential equations, first order partial differential equations, deRham theory. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

281. Real Analysis I. Measures; Lebesgue integral; L^p spaces; Daniell integral, differentiation theory, product measures. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

282. Real Analysis II. Metric spaces, fixed point theorems, Baire category theorem, Banach spaces, fundamental theorems of functional analysis, Fourier transform. Prerequisite: Mathematics 281 or equivalent. One course. *Staff*

284. Topics in Functional Analysis. Advanced spectral analysis, operator algebras, nonlinear functional analysis, or structure theory of Banach spaces. Prerequisite: Mathematics 282 or equivalent. One course. *Staff*

285. Complex Analysis. Complex calculus, conformal mapping, Riemann mapping theorem, Riemann surfaces. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

286. Topics in Complex Analysis. Geometric function theory, function algebras, several complex variables, uniformization, or analytic number theory. Prerequisite: Mathematics 285 or equivalent. One course. *Staff*

288, 289. Topics in Analysis. Harmonic analysis, dynamical systems, geometric measure theory, or calculus of variations. Prerequisites: Mathematics 281 and 285 or equivalents. Two courses. *Staff*

290. Probability. Random variables, independence, expectations, laws of large numbers, central limit theorem, Markoff chains. Prerequisite: Mathematics 281 or equivalent. One course. *Staff*

293, 294. Topics in Probability Theory. Ergodic theory, multiparameter stochastic processes and random fields, stochastic control theory, or stochastic differential equations. Prerequisite: Mathematics 290 or consent of instructor. Two courses. *Staff*

295. Fourier Analysis and Distribution Theory. Tempered distributions, Fourier transforms, classical inequalities, and oscillatory integrals. Prerequisites: Mathematics 140 and 285 or equivalents. One course. *Staff*

296. Ordinary Differential Equations. Existence and uniqueness theorems for nonlinear systems, well-posedness, two-point boundary value problems, phase plane diagrams, stability, dynamical systems, and strange attractors. Prerequisites: Mathematics 104, 111 or 131, and 203 or 139. One course. *Staff*

297. Partial Differential Equations I. Fundamental solutions of linear partial differential equations, hyperbolic equations, characteristics, Cauchy-Kowalevski theorem, propagation of singularities. Prerequisite: Mathematics 140 or equivalent. One course. *Staff*

298. Partial Differential Equations II. Elliptic boundary value problems, regularity theorems, the diffusion equation, and nonlinear equations. Prerequisite: Mathematics 297 or equivalent. One course. *Staff*

299. Topics in Partial Differential Equations. Hyperbolic conservation laws, pseudo-differential operators, variational inequalities, theoretical continuum mechanics. Prerequisite: 298 or equivalent. One course. *Staff*

COURSES CURRENTLY UNSCHEDULED

135P, 136P. Preceptorial

278, 279. Topics in Topology

283. Linear Operators

THE MAJOR

The Department of Mathematics publishes a handbook to guide majors in selecting courses for various areas of interest. A copy may be obtained from the Director of Undergraduate Studies.

For the A.B. Degree

Major Requirements. Six courses in mathematics numbered above 106, including either Mathematics 139 or Mathematics 203 and 204.

For the B.S. Degree

Major Requirements. Eight courses in mathematics numbered above 106, including (1) either Mathematics 139 or Mathematics 203, 204; and (2) one of the sequences 135, 136; 200, 201; 205, 206; 230, 231. Students must also meet an area of concentration requirement by (1) satisfying the major requirement of any discipline other than mathematics or by (2) completing a program of four mathematically related courses approved by the Director of Undergraduate Studies.

Honors

The department offers a program for graduation with distinction in mathematics. See the section on honors in this bulletin and also the *Handbook for Majors*.

School of Medicine—Basic Science Courses Open to Undergraduates

Qualified students in arts and sciences may select courses from the following offered by the graduate departments associated with the School of Medicine. A major is not offered to undergraduates in any of the departments listed below. For permission to register for these courses and for further information, see Professors Counce (anatomy), Siegel (biochemistry), Willett (microbiology and immunology), Bigner (pathology), or Associate Professor Padilla (physiology). The following 200-level courses are described in the *Bulletin of Duke University: Graduate School*.

Anatomy (ANA)

- 151. Anatomy of the Lower Extremities as It Relates to Locomotion. Prerequisite: written consent of instructor. One course. *Bassett*
- 156S. Biological Psychology. C-L: Psychology 156S. One course. *Diamond*
- 166S. Comparative Neurobiology. Prerequisite: consent of instructor. C-L: Psychology 166S. One course. *Diamond and W. C. Hall*
- 191, 192, 193, 194. Independent Study. Open to qualified juniors and seniors with consent of instructor. No more than three of these may be taken for credit. Four courses. *Staff*
- 216S. Biological Psychology. Same as 156S except additional term paper required. See C-L: Psychology 216S. One course. *Hall and Diamond*
- 217. Structure and Function of Visual Photoreceptors. Prerequisite: consent of instructor. Credit to be arranged; maximum one course. *Corless and McCaslin*
- 219. Molecular and Cellular Bases of Differentiation. C-L: Biochemistry 219, Microbiology and Immunology 219, Pathology 219, and Physiology 230. One course. *Counce and staff*
- 220. Developmental Biology. Prerequisite: a course in genetics or cell biology. One course. *Counce and Marchase*
- 246S. The Primate Fossil Record. Prerequisite: a course in human evolution. C-L: Anthropology 246S. One course. *Simons*
- 259. Molecular Biology I: Protein and Membrane Structure/Function. Prerequisite: introductory biochemistry or consent of instructor. C-L: Biochemistry 259 and Microbiology and Immunology 259. One course. *Erickson and staff*
- 266S. Comparative Neurobiology. Same as 166S except additional term paper is required. C-L: Psychology 266S. One course. *Diamond and W.C. Hall*
- 269. Advanced Cell Biology. Prerequisite: introductory cell biology or consent of instructor. C-L: Botany 269, Microbiology and Immunology 269, and Zoology 269. One course. *McIntosh and staff*
- 286. Electron Microscopy and Related Techniques. Prerequisites: calculus and one year each of physics and general chemistry; or consent of instructor. One course. *Longley*
- 292. Topics in Morphology and Evolution. Prerequisite: consent of instructor. One course. *Smith*

Courses Currently Unscheduled

- 219S. Seminar

Biochemistry (BCH)

- 209, 210. Independent Study. One or two courses. *Staff*
- 215. Genetic Mechanisms. Prerequisite: introductory biochemistry. C-L: Genetics—The University Program. One course. *Webster and staff*
- 219. Molecular and Cellular Bases of Differentiation. C-L: Anatomy 219, Microbiology and Immunology 219, Pathology 219, and Physiology 230. One course. *Padilla and staff*
- 220S. Adaptations of Organisms to the Marine Environment. C-L: Marine Sciences. (Given at Beaufort.) Half course. *C. Bonaventura or J. Bonaventura*
- 222. Structure of Biological Macromolecules. Half course. *Richardson*
- 227. Introductory Biochemistry I: Intermediary Metabolism. Prerequisite: organic chemistry. C-L: Botany 227. One course. *Fridovich and Rajagopalan*
- 245L. Macromolecules, Ecology, and Evolution. C-L: Marine Sciences. One course. *Sullivan*
- 259. Molecular Biology I: Protein and Membrane Structure/Function. Prerequisite: introductory biochemistry or consent of instructor. C-L: Anatomy 259 and Microbiology and Immunology 259. One course. *Richardson and staff*
- 265S, 266S. Seminar. Topics and instructors announced each semester. Half course or variable. *Staff*
- 268. Molecular Biology II: Nucleic Acids. Prerequisites: introductory biochemistry and Biochemistry 259 or consent of instructor. C-L: Botany 268 and Microbiology and Immunology 268. One course. *Modrich and staff*
- 276L. Comparative and Evolutionary Biochemistry. C-L: Marine Sciences. (Given at Beaufort.) One and one-half courses. *Sullivan*

- 291. Physical Biochemistry. Prerequisites: Chemistry 161 and 162 or equivalents. One course. *Hsieh and staff*
- 297. Intermediary Metabolism. One course. *Siegel and staff*
- 299. Nutrition. Half course. *Kamin*

Courses Currently Unscheduled

- 228. Introductory Biochemistry II: Biological Macromolecules

Microbiology and Immunology (MIC)

- 209, 210. Independent Study. A laboratory or library project. Approval of Director of Undergraduate Studies and instructor required. Credit to be arranged. *Staff*
- 219. Molecular and Cellular Bases of Differentiation. C-L: Anatomy 219, Biochemistry 219, Pathology 219, and Physiology 230. One course. *McCarty and staff*
- 221. Medical Microbiology. Prerequisite: consent of instructor. One course. *Joklik and staff*
- 221L. Medical Microbiology. Prerequisite: consent of instructor. One and one-half courses. *Joklik and staff*
- 234. Introduction to Biostatistical Methods. Prerequisite: elementary mathematics including college algebra. One course. *Dawson*
- 238. Intermediate Biostatistics and Data Analysis. Prerequisite: Microbiology 234 or equivalent. One course. *Dawson*
- 244. Principles of Immunology. Prerequisites: Zoology 160 and Chemistry 152 and consent of instructor. C-L: Zoology 244. One course. *Amos and McClay*
- 246S. Parasitic Diseases. Prerequisites: Microbiology 244 or 291, and Biochemistry 227 or equivalent. One course. *Balber*
- 259. Molecular Biology I: Protein and Membrane Structure/Function. Prerequisite: introductory biochemistry or consent of instructor. C-L: Anatomy 259 and Biochemistry 259. One course. *Richardson and staff*
- 268. Molecular Biology II: Nucleic Acids. Prerequisites: introductory biochemistry and Microbiology 259 or consent of instructor. C-L: Biochemistry 268 and Botany 268. One course. *Modrich and staff*
- 269. Advanced Cell Biology. Prerequisite: introductory cell biology or consent of instructor. C-L: Anatomy 269, Botany 269, and Zoology 269. One course. *McClay and staff*

Courses Currently Unscheduled

- 236. Statistical Methods in Human Genetics

Pathology (PTH)

All courses require consent of instructor and Director of Graduate Studies.

- 210. Independent study. Prerequisite: senior standing. Credit to be arranged. *Staff*
- 219. Molecular and Cellular Bases of Differentiation. C-L: Anatomy 219, Biochemistry 219, Microbiology and Immunology 219, and Physiology 230. One course. *Padilla and staff*
- 258. Cellular and Subcellular Pathology. Half course. *Shelburne and Sommer*
- 275. Fundamentals of Electron Microscopy and Biological Microanalysis. One course. *Shelburne, Ingram, Brody, and Sommer*

Physiology (PHS)

- 200. Medical Physiology. Limited to students whose training requires knowledge of human physiology as it pertains to medicine. Four lectures, one conference, and one clinical correlation per week. Open to undergraduates only with consent of course leader. One course. *Padilla and staff*
- 204. Introduction to Modern Physiology. Prerequisites: Physiology 200 or equivalent and consent of instructor. One course. *Blum and staff*
- 205. Design and Analysis of Biological Experiments. Half course. *Lobaugh*
- 208. Respiratory System in Health and Disease. Prerequisite: consent of instructor. Half course. *Camporesi and Kylstra*
- 210. Individual Study. Prerequisites: senior standing and consent of Director of Undergraduate Studies. Credit to be arranged. *Staff*
- 217. Membrane Transport. Prerequisite: consent of instructor. One course. *Mandel and staff*
- 230. Molecular and Cellular Bases of Differentiation. C-L: Anatomy 219, Biochemistry 219, Microbiology and Immunology 219, and Pathology 219. One course. *Padilla and staff*
- 272S. Physiology of the Central Nervous System. Prerequisite: consent of instructor. See C-L: Psychology 272S. Half or one course. *Somjen and staff*

Courses Currently Unscheduled

- 203. Introduction to Biophysics and Biophysical Chemistry
- 260S. Interactions of Differentiated Cells

Medieval and Renaissance Studies Program

Professor Tetel (Romance languages), *Director of the Program and Undergraduate Studies*

The Program in Medieval and Renaissance Studies is designed to provide the student with a well-rounded understanding of the historical, cultural, and social forces that shaped the medieval and Renaissance periods. The program is divided into four areas of study: fine arts (art and musicology); history; language and literature (English, French, German, Greek, Italian, Latin, and Spanish); and philosophy-religion. An interdisciplinary major is offered. See the section on the major below.

The courses listed below are among those now available in the program, and they are described under the listings of the specified departments.

Art and Art History

- 129. The Age of Justinian. *Epstein*
- 132. Romanesque Art. *Bruzelius*
- 133. Gothic Art. *Bruzelius*
- 134. Medieval Architecture. *Bruzelius*
- 135. Gothic Cathedrals. *Bruzelius*
- 136. Gothic Cathedrals. Taught in French. *Bruzelius*
- 137. The Twelfth Century. *Staff*
- 140. Giotto and the Origins of the Renaissance. *Goffen*
- 141. Fifteenth-Century Italian Art. *Goffen or Spencer*
- 142. Sixteenth-Century Italian Art. *Goffen or Spencer*
- 147. Venetian Art: Fifteenth Century to the Eighteenth Century. *Goffen*
- 148. Art of Netherlands in the Fifteenth Century. *Melion*
- 150. Prints in the Fifteenth, Sixteenth, and Seventeenth Centuries. *Melion*
- 152. Art of the Netherlands in the Sixteenth Century. *Melion*
- 230S. Medieval and Byzantine Art and Architecture. *Epstein*
- 232S. Romanesque and Gothic Art and Architecture. *Bruzelius*
- 240. Italian Art. *Goffen or Spencer*
- 242S. Studies in Italian Renaissance Art. *Goffen or Spencer*

Classical Studies

- 117. Ancient Mythographers. *Newton*

Comparative Literature

- 123. Approaches to Arthurian Romance. *Westphal-Wihl*

English

- 121. Medieval English Literature to 1500. *Nygard*
- 122. Sixteenth-Century English Literature. *DeNeef or Fish*
- 123. English Literature: 1600 to 1660. *DeNeef, Fish, or Randall*
- 141. Chaucer. *DeNeef or Nygard*
- 143, 144. Shakespeare. *DeNeef, Gopen, Jackson, Jones, Porter, Randall, or G. Williams*
- 145. Milton. *Fish or Price*
- 182. Western Drama, Classical to Neoclassical. *Clum*
- 208. History of the English Language. *Butters or Nygard*
- 212. Middle English Literature: 1100 to 1500. *Nygard*
- 221. Renaissance Prose and Poetry: 1500 to 1660. *DeNeef, Fish, Randall, or G. Williams*
- 225. Renaissance Drama: 1500 to 1642. *Randall*

French

- 145S. Topics in Renaissance Literature and Culture. *Tetel*
- 146S. Montaigne and Self-Portraiture. *Tetel*
- 148. French Drama of the Seventeenth Century. *Staff*
- 211. History of the French Language. *Hull*
- 248. French Literature of the Seventeenth Century. *Staff*

German

- 205, 206. Middle High German. *Westphal-Wihl*
- 215S. Seventeenth-Century Literature. *Borchardt*
- 216. History of the German Language. *Westphal-Wihl*
- 217S. Renaissance and Reformation Literature. *Borchardt*

History

- 104. The Intellectual Life of Europe, 1250-1600. *Barnett-Robisheaux or Witt*
- 105. Political and Constitutional History of England. *Herrup*

- 107. Social and Cultural History of England. *Cell and Herrup*
- 117. Early Modern Europe. *Neuschel*
- 133. Medieval Europe, A.D. 300-1400. *Young*
- 134. Medieval England. *Young*
- 138. Early Modern Germany. *Barnett-Robisheaux*
- 173. History of Spain from Late Medieval Times to Present. *TePaske*
- 174. History of Colonial Hispanic America from Pre-Columbian Times to the Wars of Independence. *TePaske*
- 195S.01-196S.01. Renaissance Intellectual History, 1300 to 1600. *Witt*
- 195S.13-196S.13. Problems in Early Modern English History. *Herrup*
- 195S.20. Comparative Problems in Early Modern European History. *Barnett-Robisheaux or Neuschel*
- 195S.28. The Black Death and the Crisis of Late Medieval Europe. *Barnett-Robisheaux*
- 221. Problems in the Economic and Social History of Europe, 1200-1700. *Witt*
- 222. Problems in the Intellectual History of the European Renaissance and Reformation. *Witt*
- 237S. Europe in the Early Middle Ages. *Young*
- 238S. Europe in the High Middle Ages. *Young*
- 267S-268S. From Medieval to Early Modern England. *Herrup*

Interdisciplinary Courses

- 21S. Freshman Seminar: Topics in Medieval Studies. *Staff*
- 22S. Freshman Seminar: Topics in Renaissance Studies. *Staff*
- 160S. Topics in Medieval and Renaissance Studies. *Staff*

Italian

- 183. Readings in Italian Literature. *Caserta*
- 284, 285. Dante. *Caserta*

Latin

- 87, 88. Sight Reading in Classical, Medieval, and Renaissance Latin. *Staff*
- 221. Medieval Latin. *Newton*

Music

- 155S. Music History I: Antiquity, Middle Ages, Early Renaissance. *Seebass or Silbiger*
- 156S. Music History II: Late Renaissance, Baroque. *Bartlet, Seebass, or Silbiger*
- 211. Notation. *Staff*
- 222. Music in the Middle Ages. *Seebass*
- 223. Music in the Renaissance. *Staff*

Philosophy

- 119. Medieval Philosophy. *Mahoney*
- 120. Late Medieval and Renaissance Philosophy. *Mahoney*
- 218S. Medieval Philosophy. *Mahoney*
- 219S. Late Medieval and Renaissance Philosophy. *Mahoney*

Religion

- 134. Jewish Mysticism. *Bland*
- 135. Jewish Religious Thought. *Bland*
- 162. Introduction to Islamic Civilization. *Lawrence and staff*

Spanish

- 108S. Spanish Traditional Poetry. *Garcí-Gómez*
- 151. Spanish Literature of the Renaissance and the Baroque. *Ross or Wardropper*
- 153. Golden Age Literature: Cervantes. *Staff*
- 210. History of the Spanish Language. *Garcí-Gómez*
- 251. The Origins of Spanish Prose Fiction. *Wardropper*
- 253. Cervantes. *Wardropper*
- 254. Drama of the Golden Age. *Wardropper*
- 258S. Spanish Lyric Poetry before 1700. *Wardropper*

THE MAJOR

A major consists of at least eight courses drawn from the nonintroductory courses of the four areas of study (fine arts, history, language and literature, and philosophy-religion). Three courses in each of two areas must be included. Besides the courses specifically listed (under departmental and Interdisciplinary Course headings) in the medieval and Renaissance periods, provision may be made for independent study in any of the four areas.

Each program is tailored to the needs and interests of the student under the supervision of a committee consisting of faculty members from appropriate departments. After discussion with the Director of Undergraduate Studies for Medieval and Renaissance Studies, the student submits a provisional program of study outlining special interdisciplinary interests. Normally the program is planned well before the end of the sophomore year to allow time to acquire a working knowledge of languages pertinent to specific interests.

Military Science—Army ROTC (MSC)

Professor Lockey, Lieutenant Colonel, U.S. Army, *Chairman*; Assistant Professor Costales, Captain, U.S. Army, *Director of Undergraduate Studies*; Assistant Professor Earle, Captain, U.S. Army, *Supervisor of Freshman Instruction*

The Department of Military Science offers students from all disciplines within the University the opportunity to learn the theory behind and the practical application of skills involving the following areas: leadership, management (time, personnel, and materiel), communications, land navigation, military law, and tactics. Non-ROTC students may take courses without incurring an obligation to the Army.

The Army ROTC program is made up of a two-year basic course of study (freshman and sophomore level) which is taken without obligation by non-scholarship students and a two-year advanced course of study (junior and senior level) which includes a six-week advanced camp, usually completed during the summer prior to the senior year. Direct entry into the advanced course is sometimes permitted if an applicant has previous military training or experience, or when a six-week basic camp is completed. To be eligible for participation in the advanced course, students must successfully complete the basic course (unless direct entry is permitted), be physically qualified, be of good moral character, have a minimum of two years remaining as a student (undergraduate or graduate level or a combination), and sign a contract to accept a commission in the United States Army, the Army National Guard, or the Army Reserve as directed by the Secretary of the Army.

Laboratory is mandatory each semester for scholarship cadets and non-scholarship cadets in their second or later semester of ROTC. Some specific laboratories are required for non-ROTC students taking Military Science 51 and 52. Students should consult the Department of Military Science, (919) 684-5895—calling collect, for more detailed information. Also see the Army Reserve Officers' Training Corps section under Special Programs in this bulletin.

1L. Fall Semester Laboratory. Drill and ceremonies, marksmanship training, land navigation exercises, and confidence course training. Mandatory for Army ROTC scholarship cadets and non-scholarship cadets in their second or later semester of ROTC who are enrolled in Military Science 11, 51, 103, 113, and 151. Must be repeated with each course. No credit. *Costales*

2L. Spring Semester Laboratory. Drill and ceremonies, first aid, communications, and tactical exercises. Mandatory for Army ROTC scholarship cadets and non-scholarship cadets in their second or later semester of ROTC who are enrolled in Military Science 12, 52, 104, 114, and 152. Must be repeated with each course. No credit. *Costales*

11. Introduction to ROTC and the Army. The military organization with emphasis on tradition, doctrine, and contribution to national objectives. Laboratory required for Army ROTC scholarship cadets only. Half course. *Earle*

12. The Military Profession. Introduction to the concept of the military as a profession. Questions of ethics and values in the military; the issue of war and morality. Laboratory required for Army ROTC cadets only. Half course. *Earle*

51. Military Topography. Interpretation and use of topographical maps to facilitate land navigation. Consideration of the military significance of terrain. Laboratory required for Army ROTC cadets only, with minor exceptions. Half course. *Staff*

52. Introduction to Small Unit Tactics. Introduction to planning, organizing, and conducting small unit offensive and defensive operations. Consideration of the principles of war. Laboratory required for Army ROTC cadets only, with minor exceptions. Half course. *Staff*

103. Applied Military Leadership. Basic elements of military operations to include advanced topography and land navigation, military graphics, all-purpose unit defense, and military communications. Laboratory required for Army ROTC cadets only. Not open to students who have taken Military Science 113. One course. *Staff*

104. Advanced Tactical Theory and Techniques. Introduction to Warsaw Pact forces' tactical doctrine and equipment. Conduct of mounted and dismounted tactical operations and employment of supporting assets. Laboratory required for Army ROTC cadets only. Not open to students who have taken Military Science 114. One course. *Staff*

113. Advanced Military Operations. Fundamentals of the conduct of military operations including advanced military topography; unit movements; route reconnaissance; nuclear, biological, and chemical defense; and military communications. Laboratory required for Army ROTC cadets only. Prerequisite: Military Science 51. Not open to students who have taken Military Science 103. One course. *Costales*

114. Advanced Tactical Applications. Study of the Warsaw Pact Forces to include doctrine, organization, equipment, and training. Conduct of platoon offensive, defensive, and patrolling operations for mechanized infantry and armor units. Laboratory required for Army ROTC cadets only. Prerequisite: Military Science 52. Not open to students who have taken Military Science 104. One course. *Costales*

151. Military Justice and the Law of War. Introduction to the Uniform Code of Military Justice and its relationship to the American legal system. Theory and practice of the Law of War as embodied in the Geneva, Hague, and other agreements. Laboratory required for Army ROTC cadets only. One course. *Staff*

152. Leadership and Command Management. Theory and practice of leadership and military management techniques for mission accomplishment. Laboratory required for Army ROTC cadets only. One course. *Staff*

191. Independent Study. Directed readings and research in military science. One course. *Staff*

Music (MUS)

Professor Williams, *Chairman*; Assistant Professor Henry, *Director of Undergraduate Studies and Assistant Chairman*; Professors Bone, Bryan, Hanks, Silbiger, and Withers; Associate Professors Seebass and Todd; Assistant Professors Agawu, Bartlet, Hill, and Jaffe; Visiting Professor Ward; Instructor Higgins; Lecturer Love; Artists-in-Residence Berg, Bloom, Jeffrey, Muti, Parkins, Raimi, G. Taylor, and Wynkoop; Staff Associates Cabbage, Gilmore, Gress, Hawkins, Ketch, Lail, Mizesko, Peck, Pederson, Ruggero, J. Taylor, Troxler, and Weddle; Librarian Hammond

THEORY AND COMPOSITION

36. Acoustics and Music. Physical principles underlying musical instruments, room acoustics, and the human ear. Analysis, reproduction, and synthesis of musical

sounds. No previous knowledge of physics is necessary. C-L: Physics 36. One course.
Lawson

55. Introduction to Music Theory. Fundamentals of notation, melodic and harmonic practice, analysis, and score reading, as a basis for independent work. Prerequisite: some ability to read music. Does not count for major requirements. One course.
Troxler

65. Fundamentals of Music Theory. Physical properties of sound, principles of diatonic tonal organization, melodic and harmonic constructions, elementary counterpoint, and figured bass. Prerequisite: basic knowledge of musical notation and vocabulary. One course. *Agawu, Jaffe, or Wynkoop*

66. Tonal Harmony. Harmonic language of eighteenth and nineteenth centuries, functional chromaticism, and introduction to musical forms. Prerequisite: Music 65. One course. *Agawu, Jaffe, or Wynkoop*

67S, 68S. Composition I. Composing original music in smaller forms for voice, piano, and other instruments. Studies in compositional techniques. Prerequisites: Music 65 and 66 or consent of instructor. Two courses. *Jaffe or Ward*

75. Jazz Improvisation. The theory of jazz improvisation for all instruments and its practical application to the different styles of jazz. Prerequisite: consent of instructor. Half course. *Jeffrey*

115S. Modal Counterpoint. Polyphonic practice of the fifteenth and sixteenth centuries; sacred and secular music. Prerequisite: Music 66 or consent of instructor. One course. *Higgins*

116S. Tonal Counterpoint. Polyphonic practice of the seventeenth, eighteenth, and nineteenth centuries; sacred and secular music. Prerequisite: Music 115S or consent of instructor. One course. *Higgins*

122. Orchestration. Characteristics and transpositions of the instruments. Scoring for symphony orchestra; concert band; and string, woodwind, brass, and percussion ensembles from pre-existing piano scores, or the student's original compositions. Prerequisite: Music 116S. One course. *Bryan or Jaffe*

128. Instrumental Conducting. Development of techniques of conducting instrumental ensembles with emphasis on orchestral repertoire. Score reading and analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 116S or consent of instructor. One course. *Muti*

129. Choral Conducting. Development of techniques of conducting vocal repertoire, ranging from church anthems to large-scale works. Score-reading and analysis, principles of interpretation, and practical conducting experience. Prerequisite: Music 116S or consent of instructor. One course. *Wynkoop*

130T, 131T. Performance Practice (Organ) I, II. Analytical and practical study of organ compositions from various epochs. Registration, fingering, pedaling, ornamentation, touch, and *notes inégales* as described in ancient theoretical treatises and comments of composers. Paper and performances required. Prerequisites for 130T: one year of organ instruction at Duke or the equivalent and consent of instructor; for 131T: Music 130T. Two courses. *Williams*

132T, 133T. Performance Practice (Organ) III, IV. Prerequisite for 132T: Music 131T; for 133T: Music 132T. Two courses. *Williams*

HISTORY, LITERATURE, AND MUSICOLOGY

74. Introduction to Jazz. A survey examining musical, aesthetic, sociological, and historical aspects. For nonmajors. C-L: Afro-American Studies 74 and Canadian Studies. One course. *Jeffrey*

119. The Humanities and Music. A historical survey of the relationship of significant literary texts to music, exemplifying literary genres and concepts with musical works from antiquity to the nineteenth century. Readings from primary literary sources, listening to representative musical settings. Does not count for the major in music. One course. *Bartlet, Higgins, or Seebass*

125. Masterworks of Music. Historical, biographical, and analytical study of works by major composers of the seventeenth through the twentieth centuries. C-L: Comparative Area Studies. One course. *Staff*

136. Introduction to Non-Western Music. Study of social and religious contexts. Native instruments and related craftsmanship. C-L: Comparative Area Studies. One course. *Seebass*

137. Music in South Asia. An introduction to the music and musical culture of India, Pakistan, and Bangladesh. Basic principles of theory and performance and social, religious, and historical contexts. C-L: Comparative Area Studies. One course. *Seebass and Silver*

139. Twentieth-Century Music. Influential creative stylistic developments in music of the present century. A critical survey of works by Bartók, Berg, Schonberg, Stravinsky, and Webern as a means of establishing a relative standard of values for subsequent independent exploration. Prerequisite: a one-year course in music theory or literature, or consent of instructor. One course. *Jaffe or Todd*

143. Beethoven and His Time. The music of Beethoven and its relation to contemporary historical, social, and literary developments. Emphasis on the nine symphonies. One course. *Todd*

144. Bach and His Time. The music of Johann Sebastian Bach and its historical and cultural background, with emphasis on the sacred and the instrumental works. Some consideration will also be given to the music of Bach's contemporaries, including Vivaldi, Rameau, and Handel. One course. *Staff*

155S. Music History I: Antiquity, Middle Ages, Early Renaissance. Prerequisite for music majors: Music 65 or consent of instructor; for nonmajors: consent of instructor. C-L: Medieval and Renaissance Studies. One course. *Seebass or Silbiger*

156S. Music History II: Late Renaissance, Baroque. Prerequisite for music majors: Music 65 or consent of instructor; for nonmajors: consent of instructor. C-L: Comparative Area Studies and Medieval and Renaissance Studies. One course. *Bartlet, Seebass, or Silbiger*

157S. Music History III: Rococo and Classic. Prerequisite for music majors: Music 65 or consent of instructor; for nonmajors: consent of instructor. C-L: Comparative Area Studies. One course. *Bartlet, Bryan, Seebass, or Silbiger*

158S. Music History IV: Romanticism to the Early Modern Period. Prerequisite for music majors: Music 65 or consent of instructor; for nonmajors: consent of instructor. C-L: Comparative Area Studies. One course. *Todd*

166. Opera Literature. History of opera from the late sixteenth century to the present. Relationship of music and text; opera as social commentary; changing forms and styles. Selected composers especially Mozart, Verdi, Puccini, and Wagner. One course. *Muti*

170. Romanticism in the Arts. C-L: Interdisciplinary Course 170. One course. *Applewhite, B. Ward, and R. Ward*

For Advanced Undergraduates and Graduates

201. Introduction to Musicology. Methods of research on music and its history, including studies of musical and literary sources, iconography, performance practice, ethnomusicology, and historical analysis, with special attention to the interrelationships of these approaches. One course. *Seebass or Silbiger*

211, 212. Notation. Development and changing function of musical notation from c. 900 to c. 1900, including plainchant notations, black notations, white notations, the invention of printing (particularly movable type and engraving), keyboard and lute tablatures, scores. Two courses. *Williams and staff*

213. Theories and Notation of Contemporary Music. The diverse languages of contemporary music and their roots in the early twentieth century, with emphasis on problems and continuity of musical language. Recent composers and their stylistic progenitors: for example, Ligeti, Bartók, and Berg; Carter, Schoenberg, Ives, and Copland; Crumb, Messiaen, and Webern; Case, Varèse, Cowell, and Stockhausen. One course. *Jaffe or Ward*

215. Music Analysis. Historical, philosophical, and ideological issues raised by music analysis. Intensive study of harmony and voice leading in the works of major tonal composers, with emphasis on the analytic approach of Heinrich Schenker. One course. *Agawu, Silbiger, or Todd*

216. Analysis of Twentieth-Century Music. Major currents in twentieth-century analytical thought: Allen Forte's theory of sets and Milton Babbitt's twelve-tone theory; neotonal composers Bartók and Stravinsky. One course. *Agawu*

222. Music in the Middle Ages. Selected topics. C-L: Medieval and Renaissance Studies. One course. *Staff*

223. Music in the Renaissance. Selected topics. C-L: Medieval and Renaissance Studies. One course. *Staff*

224. Music in the Baroque Era. Selected topics. One course. *Staff*

225. Music in the Classic Era. Selected topics. One course. *Staff*

226. Music in the Nineteenth Century. Selected topics. One course. *Staff*

227. Music in the Twentieth Century. Selected topics. One course. *Staff*

296S. Analysis of Contemporary Music. Structures, expressive intentions, and functions since 1914. Contemporary orchestral music, American music, European music, popular media, musical tradition and the contemporary composer. Analysis of works performed in the department's Encounters Series with occasional guest composers present. One course. *Jaffe or Ward*

297, 298, 299. Composition. Submission of portfolio of candidate's original work to include one major work (for example, for full orchestra or chamber group, or a short opera) and shorter works in diverse media demonstrating professional craftsmanship. Preparation of the portfolio will involve weekly independent study sessions with members of graduate faculty. One course each. *Jaffe or Ward*

INDEPENDENT STUDY AND SEMINARS

Admission to these courses will be subject to the approval of the Director of Undergraduate Studies and the instructor. The instructor and course content will be established in accordance with the individual student's interests and capacities.

179, 180. Independent Study in Musical Performance.* Open only to sophomores possessing an exceptional technical and interpretive command of a musical medium. Prerequisites: previous registration in private instruction in applied music at Duke, audition, and consent of instructor. Two courses. *Staff*

181, 182. Independent Study in Musical Performance.* Same as 179, 180, but for juniors. Two courses. *Staff*

183, 184. Independent Study in Musical Performance.* Same as 179, 180, but for seniors. Two courses. *Staff*

191, 192. Independent Study. Directed reading, research, and analysis within a prescribed area of music literature. Open only to qualified students in the junior year by consent of the department. Two courses. *Staff*

193, 194. Independent Study. Same as 191, 192, but for seniors. Two courses. *Staff*

APPLIED MUSIC

The study of applied music promotes the understanding of music literature through performance. A limited number of students may receive private instruction in instruments and voice for Duke University credit, providing they qualify by audition. Prior to registration students must arrange an audition, either in person or by tape recording, with the instructor. For those students who wish to study privately but do not qualify for university level instruction, a list of music teachers in the immediate area who are available to Duke students can be obtained from the music department office. Class instruction is offered in small and large ensembles. All courses may be repeated for credit. Not more than two ensembles may be taken concurrently for credit.

57S, 58S, 59S, 60S. Vocal Diction. Problems of diction for the singer. Study of standard pronunciation with special emphasis on phonetics in Italian, English, German, and French. Four half courses. *Hanks*

Instruction: half hour, quarter course credit

- 79. Class Voice. *Lail*
- 80. Piano. *Hawkins, Love, Ruggero, or Withers*
- 81. Strings. *Berg, Bloom, Cabbage, Taylor, or Raimi*
- 82. Woodwinds. *Gilmore, Henry, Jeffrey, Pederson, Troxler, or Weddle*
- 83. Brass. *Bryan, Gress, Ketch, or Mizesko*
- 85. Voice. *Hanks, Lail, or Peck*
- 86. Organ. *Parkins or Williams*
- 87. Harpsichord. *Hill*

Instruction: 1 hour, half course credit

- 90. Piano. *Hawkins, Love, Ruggero, or Withers*
- 91. Strings. *Berg, Bloom, Cabbage, Taylor, or Raimi*
- 92. Woodwinds. *Gilmore, Henry, Jeffrey, Pederson, Troxler, or Weddle*
- 93. Brass. *Bryan, Gress, Ketch, or Mizesko*
- 95. Voice. *Hanks, Lail, or Peck*
- 96. Organ. *Parkins or Williams*
- 97. Harpsichord. *Hill*

Ensemble Classes: quarter course credit; pass/fail

- 100. Symphony Orchestra. *Muti*
- 101. Wind Symphony. *Bryan*
- 102. Marching Band. *L. Troxler*
- 103. Jazz Ensemble. *Jeffrey*
- 106. Chamber Music. *Staff*
- 110. Collegium Musicum. *J. Taylor*

*The schedule of fees for private lessons, as published in the subsection on fees, is applicable to courses 179, 180, 181, 182, 183, 184.

- 111. Opera Workshop. *Hanks*
- 112. Chapel Choir. *Smith*
- 113. Chorale. *Wyntkoop*

Credit in Applied Music. (Skills courses—credit not applicable to distributional requirements.)* Credit for instruction in courses below 100 is granted on the basis of a half course per semester for one hour of private instruction per week and a minimum of six hours practice weekly; or a half course per year for one half hour of private instruction or one period of class study and a minimum of six hours practice per week. An additional weekly class meeting for performance and criticism may be required by the instructor without additional credit. Credit for instruction in courses above 99 is granted on the basis of a half course per year for one rehearsal period of instruction and a minimum of three hours practice per week. In the summer terms, credit is awarded on the basis of a comparable amount of time in instruction and practice time.

Fees. Applied music instruction in one medium (instrument or voice) is offered free to music majors (declared first majors). Additional instruction for music majors and all instruction for nonmajors will be charged as follows:

One half-hour private lesson per week for one semester	\$100
One one-hour private lesson per week for one semester	\$200
One half-hour class lesson per week for one semester	\$60
Registration in ensemble classes (Music 100-104, 110-113)	Free

No charge is made for practice room facilities for students registered for private or class lessons in applied music. A fee schedule for the use of facilities by others not registered for applied lessons is available from the music department office.

Fees are not refundable after the final drop/add day.

See also Institute of the Arts in this bulletin.

COURSES CURRENTLY UNSCHEDULED

84. Percussion

94. Percussion

138. The Music of Southeast Asia

142. The Musical Theater

160. History of the Organ and Its Literature

165. Opera in Vienna

185S, 186S. Seminars in Music

THE MAJOR

Prerequisites. Music 65, 66, and one year of applied music study in instrument or voice. Any or all of these may be exempted through demonstration of proficiency by examination and/or audition.

Major Requirements. Music 115S, 116S, 155S, 156S, 157S, 158S, and one additional elective course in the department. Those who plan to study music beyond the undergraduate level are strongly advised to prepare themselves in two or more foreign languages.

*Subject to instructor's approval, a student at an advanced level in applied music may take courses for tutorial and distributional requirements. These courses shall be designated by adding a T to the appropriate course number. Students who have not reached an advanced level will continue to take the regular applied music courses.

Honors. Majors who are qualified (see the section on honors in this bulletin) may undertake work leading to graduation with distinction in music by application to the Director of Undergraduate Studies. Honors work usually involves participation in an appropriate senior seminar and/or independent study. It must culminate in a paper, historical or analytical, either full length by itself or somewhat more concise if offered in conjunction with a recital or composition. The paper must be approved by a faculty committee.

Naval Science—Navy ROTC (NS)

Professor Green, Captain, U.S. Navy, *Chairman*; Assistant Professors Law, Lieutenant, U.S. Navy; Mason, Lieutenant, U.S. Navy; Secor, Lieutenant, U.S. Navy; and Schwenke, Captain, U.S. Marine Corps

Courses in naval science are open to all students. The program in naval science offers students an opportunity to gain technical knowledge in naval systems, leadership and management skills, and a pathway to a challenging career as a naval officer.

Since a major is not available in this program, scholarship program participants are encouraged to pursue majors in engineering or specific science fields, although a major in any field of study leading to a baccalaureate degree meets the basic requirement. The academic program for an approved degree and commission must include all naval science courses, laboratories, and seminars. Scholarship students must complete one year of calculus by the end of the sophomore year, one year of calculus-based physics by the end of the junior year, one semester of military history, one year of English, one semester in a modern foreign language, and certain technical electives. Non-scholarship program students are encouraged, but not required, to take calculus and physics. Marine Corps students may substitute management and political science courses for the calculus and physics requirements.

11. Naval Orientation. Military formations, movements, commands, courtesies and honors, and elements of unit leadership. No course credit. *Law*

11L. Naval Orientation Laboratory. Practical application of the elements and material presented in Naval Science 11. No course credit. *Law*

12. Naval Ships Systems. Structure, elements of design, stability, compartmentation, communications, and propulsion systems as they bear on safe operation and combat or service effectiveness. One course. *Law*

12L. Naval Ships Systems Laboratory. Practical application of the theories and principles of naval ships systems. No course credit. *Law*

52. Seapower and Maritime Affairs Seminar. Contemporary studies in seapower, including an examination of the rise and current status of the Soviet Navy. No course credit. *Schwenke*

52L. Seapower Laboratory. Application and practical demonstration of the scenarios and theories presented in Naval Science 52. No course credit. *Schwenke*

126. Concepts and Analyses of Naval Tactical Systems. Detection systems; systems integration into current naval platforms and their offensive and defensive capabilities. One course. *Secor*

126L. Naval Tactical Systems Laboratory. Practical application of the theories and principles of naval tactical systems. No course credit. *Secor*

131. Navigation. Theory, principles, and procedures of ship navigation, movements, and employment. Dead reckoning, piloting, and electronic principles of navigation. Naval Science 131L should be taken concurrently. One course. *Mason*

131L. Navigation Laboratory. Practical application of the theories and principles of navigation as presented in the lecture series. No course credit. *Mason*

132. Naval Operations. Components of general naval operations, including concepts and application of tactical formations and dispositions, relative motion, maneuvering board and tactical plots, rules of the road, and naval communications. Naval Science 132L is a concurrent requirement. One course. *Mason*

132L. Naval Operations Laboratory. Practical application of the theories of naval operations as presented in the lecture series. No course credit. *Mason*

137L, 138L. Marine Tactics Laboratory. Concepts and applications of tactical employment of Marine Amphibious Forces. Ground weapons systems, land navigation, and small unit tactics. No course credit. *Schwenke*

141S. Evolution of Warfare. Continuity and change in the history of warfare, with attention to the interrelationship of social, political, technological, and military factors. One course. *Schwenke*

145L. Naval Organization and Management Laboratory. Lines of command and control; organization for logistics, service, and support; research on the practical application of fundamental leadership principles. No course credit. *Staff*

146L. Naval Ship Administration Laboratory. Concepts and applications of naval justice, shipboard administration, and training. No course credit. *Staff*

147L, 148L. Marine Leadership Laboratory. Marine Corps career management, naval correspondence, force structure, leadership techniques, and training. No course credit. *Schwenke*

151S. Amphibious Operations. Development of amphibious doctrine, with attention to its current applications. One course. *Schwenke*

Neurosciences Program (NSP)

Professor R. Erickson (psychology), *Director*

The study of the nervous system has developed into one of the most exciting areas of modern science with rapidly expanding knowledge in both basic and medically applied areas. This program offers the student the opportunity to emphasize studies in the neural sciences in the context of a flexible enough psychology-zoology interdepartmental concentration to fulfill either a preprofessional or a more general liberal arts education.

Acceptance into the interdepartmental concentration is by arrangement with the Directors of Undergraduate Studies in psychology and zoology. The interdepartmental concentration, which fulfills the requirements of a major for graduation, requires three courses beyond the introductory level in both psychology and zoology. Beyond this, acceptance into the neurosciences program is limited by the sizes of the core neurosciences courses.

The required *core* courses are Interdisciplinary Courses 98, 200, and 201. A number of recommended *allied* courses provide flexibility in the areas of neuroscience of particular interest to each student. Independent study and research with the various faculty are encouraged. A strong background in the sciences is required, but since the program is based on a psychology-zoology concentration, a student's "first division" may be in either social sciences or natural sciences (see the section on "Academic Procedures and Information").

A certificate in the neurosciences may be awarded at graduation upon successful completion of the course of study and approval of the advisory committee and Directors of Undergraduate Studies in psychology and zoology.

Further details on the neurosciences program may be obtained from the Office of the Director (Professor R. Erickson), 242 Sociology-Psychology Building.

THE INTERDISCIPLINARY PROGRAM

This interdisciplinary program is based on an interdepartmental concentration in psychology and zoology, plus three core courses in the neurosciences.

Core Courses

Interdisciplinary Course 98. Introduction to the Neurosciences. Fundamentals of the field, especially as it relates to behavior. Provides the background for Interdisciplinary Course 200 or Psychology 200. Designed for the general student interested in the neurosciences. C-L: Psychology 98. One course. *R. Erickson and staff*

Interdisciplinary Course 200. Advanced Behavioral Neuroscience I. Basic neuroanatomy and neurophysiology, physiology of the neuron and neural networks, neurotransmitter functions, sensory, and motor systems. Prerequisite: Interdisciplinary Course 98. C-L: Psychology 200. One course. *N. Cant and staff*

Interdisciplinary Course 201. Advanced Behavioral Neuroscience II. Integrative activities of the nervous system; sensory-motor relationships, neuroendocrine relationships, emotion and motivation, sleep, learning and memory, diseases of the nervous system and their psychological correlates. Prerequisite: Interdisciplinary Course 200 or Psychology 200. C-L: Psychology 201. One course. *R. Erickson and staff*

Allied Courses

A number of other courses may supplement the core courses to fulfill the interdepartmental concentration as reasonable for each individual student upon consultation with the student's adviser.

Psychology 111. Learning and Adaptive Behavior. *Staddon*

Psychology 126. Behavior and Neurochemistry. *Cooper*

Psychology 139. Motivation. *W. G. Hall*

Psychology 150S. Hormones and Behavior. *B. Erickson*

Psychology 155S/255S. Perinatal Behavior. *W. G. Hall*

Psychology 156S/216S. Biological Psychology. *Diamond*

Psychology 158S/238S. Electroencephalogram and Behavior. *Marsh*

Psychology 166S/266S. Comparative Neurobiology. *Diamond and W. C. Hall*

Psychology 167S/267S. Brain Mechanisms and Behavior. *R. Erickson*

Psychology 219S. Physiological Foundations of Psychology. *C. and R. Erickson*

Psychology 272S. Physiology of the Central Nervous System. *Somjen*

Psychology 285S. Developmental Psychobiology. *W. G. Hall*

Psychology 286S. Biological Basis of Hearing. *Casseday*

Botany 227/Biochemistry 227. Introductory Biochemistry I: Intermediary Metabolism. *Fridovich and Rajagopalan*

Anatomy 217. Structure and Function of Visual Photoreceptors. *Corless and McCaslin*

Brodie

Philosophy (PHL)

Professor Sanford, *Acting Chairman*; Associate Professor Brandon, *Director of Undergraduate Studies*; Professors Golding, Mahoney, and Peach; Associate Professor Posy; Assistant Professors Ferejohn, Jackson, and Roderick; Professor Emeritus Welsh; Adjunct Associate Professor Ward

The undergraduate program in the Department of Philosophy acquaints students with the content and the structure of philosophical theory in various areas. Discussion

is encouraged so that students can engage actively in the philosophical examination of problems.

Course offerings fall into two general categories: the systematic and the historical. In a systematic treatment, the organization of a course is primarily in terms of the problems presented by the subject matter of that course, as in logic, ethics, and metaphysics. In historical courses, attention is directed more to the order of development in the thought of a particular philosopher (Plato, Aristotle, Kant) or in a historical period. In all courses, reading of the works of philosophers acquaints the students with the important and influential contributions to the definition and solution of philosophical issues.

The problems raised in philosophy in respect to the various fields of the arts and sciences involve questions which are not normally given attention in those particular disciplines. In the consideration of such problems, therefore, it is expected that students will acquire some understanding and perspective of the major areas of the human intellectual endeavor. In this sense, philosophical comprehension is an essential part of a student's learning and education.

Philosophy provides a sound preparation for the demands of many professions. For example, the precision of argument and broad acquaintance with intellectual traditions emphasized in philosophy form an excellent basis for the study of law.

Only one course from among Philosophy 41, 42, 43S, and 44S may be taken for credit. These courses are not open to juniors and seniors.

41. Introduction to Philosophy. Examination of problems in philosophy; emphasis on metaphysics and theory of knowledge. One course. *Staff*

42. Introduction to Philosophy. Examination of problems in philosophy; emphasis on ethics and value theory. One course. *Staff*

43S. Introduction to Philosophy. Philosophy 41 conducted as a seminar. One course. *Staff*

44S. Introduction to Philosophy. Philosophy 42 conducted as a seminar. One course. *Staff*

48. Logic. The conditions of effective thinking and clear communication. Examination of the basic principles of deductive reasoning. One course. *Brandon, Posy, Sanford, or Welsh*

93. History of Ancient Philosophy. The pre-Socratics, Socrates, Plato, Aristotle, and post-Aristotelian systems. Prerequisites for freshmen: previous philosophy course and consent of instructor. One course. *Ferejohn or Mahoney*

94. History of Modern Philosophy. Bacon, Hobbes, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant. Prerequisites for freshmen: previous philosophy course and consent of instructor. One course. *Peach or Posy*

102. Aesthetics: The Philosophy of Art. The concept of beauty, the work of art, the function of art, art and society, the analysis of a work of art, criticism in the arts. One course. *Staff*

103. Symbolic Logic. Detailed analysis of deduction and of deductive systems. Open to sophomores by consent of instructor. C-L: Linguistics. One course. *Brandon or Posy*

104. Philosophy of Science. The principal philosophical and methodological problems in contemporary science. One course. *Brandon*

106. Philosophy of Law. Natural law theory, legal positivism, legal realism, the relation of law and morality. One course. *Golding*

107. Political and Social Philosophy. The fundamental principles of political and social organizations. One course. *Mahoney*

109. Philosophy of Language. A philosophical analysis of problems arising in the study of language and symbolism. Topics include: theories of language, the nature of signs and symbols, theories of meaning, types of discourse (scientific, mathematical, poetic), definition, ambiguity, metaphor. C-L: Linguistics. One course. *Posy*

110. Knowledge and Certainty. Problems in the theory of knowledge: conditions of knowledge, scepticism, perception, memory, induction, knowledge of other minds, and knowledge of necessary truths. One course. *Sanford*

111. Appearance and Reality. Problems in metaphysics: theories of existence, substance, universals, identity, space, time, causality, determinism and action, and the relation of mind and body. One course. *Sanford*

113. Philosophy of Mathematics. Survey of mathematical thought including the nature of infinity, Platonism, constructivism, and the foundational crisis of the early twentieth century. Prerequisite: one course in calculus or logic or philosophy; or consent of instructor. One course. *Posy*

116. Systematic Ethics. Problems in moral philosophy: the nature of morality, ethical relativism, egoism, utilitarianism. Both historical and contemporary readings, with emphasis on the latter. One course. *Golding or Jackson*

117. Ancient and Modern Ethical Theories. The development of ethical thought in the West; the interaction between culture and ethical theory, with special reference to the Greek city-state, Roman law, the Renaissance, the Reformation, and the rise of modern science. Readings in the great ethical philosophers. One course. *Jackson*

118. Philosophical Issues in Medical Ethics. Ethical issues arising in connection with medical practice and research and medical technology. Definition of health and illness; experimentation and consent; genetic counseling and biological engineering; abortion, contraception, and sterilization; death and dying; codes of professional conduct; and the allocation of scarce medical resources. Prerequisites for freshmen: previous philosophy course and consent of instructor. One course. *Brandon, Golding, or Jackson*

119. Medieval Philosophy. Christian, Islamic, and Jewish philosophy from late antiquity to 1300. Special emphasis on historical influences and institutional developments. Nature and destiny of humans, existence and nature of God, problem of ethical norms, political philosophy. C-L: Medieval and Renaissance Studies. One course. *Mahoney*

120. Late Medieval and Renaissance Philosophy. Problems of political authority and nature of the state, mysticism, humanism, critical trends, background of Galileo, and impact of the Reformation related to cultural and institutional changes. C-L: Medieval and Renaissance Studies. One course. *Mahoney*

122. Philosophical Issues in Feminism. Issues in political and moral philosophy in their bearing on feminist concerns, including political equality and rights, preferential treatment, feminist and nonfeminist critiques of pornography, and the morality of abortion. C-L: Women's Studies. One course. *Jackson*

125. Philosophy of Music. The nature of music and its place in the arts. Emotion and meaning, creation and interpretation in music. Readings from a wide variety of sources. One course. *Ward*

132. Nineteenth-Century Philosophy. Emphasis on Hegel, Marx, and Nietzsche. One course. *Staff*

134. Existentialism. One or more major texts, such as Sartre's *Being and Nothingness*. One course. *Ward*

138. Analytic Philosophy in the Twentieth Century. An historical survey from Frege, Moore, Russell, and the logical positivism of the Vienna Circle to current developments. Philosophers covered include Wittgenstein, Ryle, Austin, Quine, and Davidson. Prerequisite: one philosophy course or consent of instructor. One course. *Posy and Sanford*

139. Twentieth-Century Continental Philosophy. A critical and historical examination of movements in European philosophy such as existentialism, structuralism, poststructuralism, hermeneutics, and critical theory. Husserl, Heidegger, Sartre, Gadamer, Habermas, and Derrida: their views of language, history, and the problems of modern society. One course. *Roderick*

191, 192, 193, 194. Independent Study. Directed reading and research. Open only to highly qualified students in the junior and senior year with consent of the department. *Staff*

For Seniors and Graduates

203S. Contemporary Ethical Theories. The nature and justification of basic ethical concepts in the light of the chief ethical theories of twentieth-century British and American philosophers. One course. *Golding or Jackson*

204S. Philosophy of Law. Natural law theory and positivism; the idea of obligation (legal, political, social, moral); and the relation of law and morality. One course. *Golding*

206S. Responsibility. The relationship between responsibility in the law and moral blameworthiness; excuses and defenses; the roles of such concepts as act, intention, motive, ignorance, and causation. One course. *Golding*

208S. Political Values. Analysis of the systematic justification of political principles and the political values in the administration of law. One course. *Golding or Jackson*

211S. Plato. Selected dialogues. One course. *Ferejohn*

217S. Aristotle. Selected topics. One course. *Ferejohn*

218S. Medieval Philosophy. Selected problems. C-L: Medieval and Renaissance Studies. One course. *Mahoney*

219S. Late Medieval and Renaissance Philosophy. Selected problems. C-L: Medieval and Renaissance Studies. One course. *Mahoney*

225S. British Empiricism. A critical study of the writings of Locke, Berkeley, or Hume with special emphasis on problems in the theory of knowledge. One course. *Peach*

227S. Continental Rationalism. A critical study of the writings of Descartes, Spinoza, or Leibniz with special emphasis on problems in the theory of knowledge and metaphysics. One course. *Peach*

228S. Recent and Contemporary Philosophy. A critical study of some contemporary movements, with special emphasis on analytic philosophers. One course. *Posy*

230S. The Meaning of Religious Language. Prerequisite: consent of instructor. C-L: Religion 230S. One course. *Potter*

231S. Kant's Critique of Pure Reason. One course. *Posy*

233S. Methodology of the Empirical Sciences. Recent philosophical discussion of the concept of a scientific explanation, the nature of laws, theory and observation,

probability and induction, and other topics. Prerequisite: consent of instructor. One course. *Brandon*

234S. Problems in the Philosophy of Biology. Selected topics, with emphasis on evolutionary biology: the structure of evolutionary theory, adaptation, teleological or teleonomic explanations in biology, reductionism and organicism, the units of selection, and sociobiology. Prerequisite: consent of instructor. C-L: Botany 234S. One course. *Brandon*

235S. Hegel and Marx. Hegel's philosophy and its influence on Marx. One course. *Roderick*

251S. Epistemology. Selected topics in the theory of knowledge, for example, conditions of knowledge, scepticism and certainty, perception, memory, knowledge of other minds, and knowledge of necessary truths. One course. *Sanford*

252S. Metaphysics. Selected topics: substance, qualities and universals, identity, space, time, causation, and determinism. One course. *Sanford*

253S. Philosophy of Mind. Analysis of concepts such as thought and belief; issues such as mind-body relations, thought and action, the nature of persons and personal identity. One course. *Sanford*

291S, 292S. Special Fields of Philosophy. One course. *Staff*

COURSES CURRENTLY UNSCHEDULED

101. Philosophy of Religion

105. Philosophy of History

108. Social Ideals and Utopias

112. Philosophy of Mind

121. Philosophy and Film

135. Philosophy in Literature

196S, 197S, 198S, 199S. Seminars in Philosophy

202S. Aesthetics: The Philosophy of Art

205S. Philosophy of History

232S. Recent Continental Philosophy

254S. Topics in Philosophy of Religion

THE MAJOR

Major Requirements. Eight courses in philosophy including Philosophy 93 and 94; at least one nonintroductory course in moral, social, political, or legal philosophy, such as Philosophy 106, 107, 108, 116, 117, 118, or 122; and at least one course at the 200 level. In addition, a course in logic is highly recommended.

Honors. The department offers work leading to graduation with distinction. See the section on honors in this bulletin.

Physics (PHY)

Professor Lewis, *Chairman*; Professor Evans, *Director of Undergraduate Studies*; Professors Biedenbarn, Bilpuch, Cusson, De Lucia, Fairbank, Goshaw, Han, Herbst, Meyer, Roberson, Robinson, Walker, Walter, and Weller; Associate Professors Fortney and

Palmer; Assistant Professors Behringer, Howell, Oh, and Tornow; Adjunct Professors Guenther and Rogosa; Adjunct Associate Professor Lawson; Adjunct Assistant Professor Kolena; Instructor Brown

By studying physics students learn the methods and results of a systematic examination of the objects that make up the natural universe and of their interactions with each other. The knowledge and analytical skills thus obtained are basic to the study of the sciences and engineering. The department offers a number of courses for nonspecialists who wish to learn about the physicist's description of nature for its intrinsic intellectual value.

21, 22. These numbers represent one course credit each for advanced placement on the basis of the College Board examinations "Physics-C."

32. Physics from the Historical Perspective. The historical development of physical theories is traced from early theories of the solar system to relativity and quantum theory. No previous study of physics is assumed, but the student must be able to use simple mathematics through basic algebra. One course. *Walker or Palmer*

33. Energy: Principles, Problems, Alternatives. Basic principles of physics as related to energy, the energy crisis, possible sources and alternatives. Conservation and environmental aspects of energy consumption. Optional special topics laboratory. No previous knowledge of physics assumed. One course. *Robinson*

36. Acoustics and Music. The physical principles underlying musical instruments, room acoustics, and the human ear. Analysis, reproduction, and synthesis of musical sounds. No previous knowledge of physics is assumed. C-L: Music 36. One course. *Lawson*

41, 42. Fundamentals of Physics. For students interested in majoring in physics; taken in the freshman year. Basic principles of physics, mainly classical, at a level similar to Physics 51, 52, but with emphasis on laying a foundation for further study. Lecture, recitations, and laboratory. Closed to students having credit for Physics 51, 52. Prerequisite: consent of Director of Undergraduate Studies; Mathematics 31 and 32 may be taken concurrently. Two courses. *Evans or Goshaw*

51, 52. General Physics. Basic principles of general physics treated quantitatively. Designed for students entering medicine, engineering, and the sciences. Not open for credit to students who have completed Physics 41, 42. Students planning to major in physics should enroll in Physics 41, 42 in their freshman year. Prerequisites: Mathematics 31 and 32 or equivalents; Mathematics 32 may be taken concurrently with Physics 51. Two courses. *Staff*

55. Introduction to Astronomy. The evolving theory of the physical universe. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Several observatory sessions. One course. *Herbst or Kolena*

100. Introduction to Modern Physics. Survey of modern physics including relativity and the quantum physics of atoms, nuclei, particles, and quarks. Does not count for the physics major. Prerequisites: Physics 51, 52 or 41, 42 and Mathematics 103 (may be taken concurrently). One course. *Han*

105. Introduction to Astrophysics. Basic principles of astronomy treated quantitatively. Cosmological models, galaxies, stars, interstellar matter, the solar system, and experimental techniques and results. Prerequisites: Mathematics 31 and Physics 51, 52 or consent of the instructor. One course. *Kolena*

143. Optics and Modern Physics. Continuation of Physics 41, 42 with more advanced mathematical treatment of selected areas of classical and modern physics.

Lecture, recitation, and laboratory. Prerequisites: Physics 41, 42 or 51, 52 and Mathematics 103 (may be taken concurrently). One course. *Goshaw*

171. Electronics. Elements of electronics including circuits, transfer functions, solid-state devices, transistor circuits, operational amplifier applications, digital circuits, and computer interfaces. Lectures and laboratory. Prerequisite: Physics 41, 42 or 51, 52. One course. *Fortney*

176. Thermodynamics and Kinetic Theory. Thermodynamics, kinetic theory, and elementary statistical mechanics. Prerequisites: Physics 41, 42 or 51, 52 and Mathematics 103 (may be taken concurrently). One course. *Behringer*

181. Introductory Mechanics. Newtonian mechanics at the intermediate level, Lagrangian mechanics, linear oscillations, special relativity. Prerequisites: Physics 41, 42 or 51, 52 and Mathematics 111 or equivalent (may be taken concurrently). One course. *Roberson*

182. Electricity and Magnetism. Electrostatic fields and potentials, boundary value problems, magnetic induction, energy in electromagnetic fields, Maxwell's equations, introduction to electromagnetic radiation. Prerequisites: Physics 41, 42, or 51, 52 and Mathematics 111 or equivalent. One course. *Evans*

185, 186. Modern Optics. Optical processes including the propagation of light, coherence, interference, and diffraction. Consideration of the optical properties of solids with applications to modern optical devices. Second semester will emphasize nonlinear interactions, optical modulators, lasers, and spectroscopy. Lecture and laboratory projects. Prerequisites: Physics 42 or 52 and Mathematics 103. C-L for 185: Electrical Engineering 213. Two courses. *Guenther or Hacker*

For Seniors and Graduates

211. Modern Physics. Fundamental concepts of quantum theory applied mainly to study of atomic structure and spectra, and to statistical physics. Prerequisites: Physics 181 and Mathematics 111. One course. *Herbst*

214. Introduction to Solid-State Physics. C-L: Electrical Engineering 214. One course. *Hacker*

215. Introduction to Quantum Mechanics. Fundamental postulates; wave mechanics and elementary applications; operators, eigenvalues, and eigenfunctions; angular momentum and rotations; spin and coupling of angular momenta; perturbation theory, transition rates, and selection rules; identical particles; applications. Prerequisites: Physics 181 and 211; Mathematics 111 and 114 (may be taken concurrently). One course. *Robinson*

217S, 218S. Advanced Physics Laboratory and Seminar. Experiments involving the fields of electricity, magnetism, heat, optics, and modern physics. Two courses. *Meyer*

225, 226. Elementary Investigations. Training in the laboratory and library methods of physical research. Qualified students may conduct elementary investigations under the supervision of a member of the staff. Two courses. *Staff*

240. Computer Applications to Physical Measurement. Hardware and software techniques for computer-assisted data acquisition, display, and control in the modern experimental environment. Theory and application of discrete signal analysis including digital filters, Z-transform, and fast Fourier transform. Lecture and laboratory. Prerequisite: Physics 171 or consent of instructor. One course. *Fortney*

244. Nuclear and Particle Physics. Current ideas and models in nuclear and particle physics. Experimental methods; nuclear structure; nuclear reactions; families

of elementary particles; quarks and gluons; weak interactions. Prerequisite: Physics 211. One course. *Oh*

COURSES CURRENTLY UNSCHEDULED

102. Applications of Modern Physics in Medicine

106. Topics in Astrophysics

212. Modern Physics

THE MAJOR

Students majoring in physics are prepared for work in industrial and governmental laboratories. They are also prepared for graduate work in physics or for the study of medicine.

Students planning to major in physics should enroll in Physics 41, 42 in their freshman year. They should also arrange to complete the necessary mathematics as soon as possible.

For the A.B. Degree

Prerequisites. Physics 41, 42 or 51, 52, or equivalents; Mathematics 31, 32, 103, 111, or equivalents; and one additional course at the 100 or 200 level.

Major Requirements. Physics 143, 171, 176, 181, and two other courses in physics at the 100 or 200 level.

For the B.S. Degree

Prerequisites. Physics 41, 42 or 51, 52, or equivalents; Mathematics 31, 32, 103, 111, or equivalents; and one additional course at the 100 or 200 level.

Major Requirements. Physics 143, 171, 176, 181, 182, 211, and two other courses in physics at the 100 or 200 level, at least one of which must be a laboratory course. Students planning graduate study in physics are urged to take one additional elective in physics and one in mathematics.

Honors

The department offers seniors the possibility of being associated with research conducted in the department. This work may lead to graduation with distinction. See the section on honors in this bulletin.

Polish

For courses in Polish, see Slavic Languages and Literatures.

Political Science (PS)

Professor Kornberg, *Chairman*; Associate Professor Johns, *Director of Undergraduate Studies*; Professors Ascher, Barber, Bates, Braibanti, Fish, Hall, Holsti, Horowitz, Hough, Leach, Paletz, Price, Spragens, and Valenzuela; Associate Professors Eldridge, Lange, and McKean; Assistant Professors Booth, Entman, Gillespie, Grieco, Kitschelt, Lomperis, and Roberts; Professors Emeriti Ball, Cleaveland, Cole, Grzybowski, Hallowell, Kulski, and Simpson; Adjunct Associate Professor O'Barr

Courses in political science for undergraduates are offered in four fields: (A) American government, politics, and public administration; (B) comparative government and politics; (C) political theory and methodology; and (D) international law, relations, and politics. In the course descriptions below the field within which the

course falls is indicated by the appropriate letter symbol (A,B,C,D) after the title of the course. In each field, a course numbered at the 90 level serves as an introduction both to the study of political science and to the subject matter and approaches of the field, and middle and upper level courses and seminars (numbered at the 100 and 200 levels respectively) consider particular aspects and topics within the field. In addition, independent study under faculty supervision enables students to explore topics of special interest. See below, following the course descriptions, for the listing of courses by fields, information on internships, and requirements for the major and honors.

INTRODUCTORY COURSES

The following courses introduce the study of political science, and each serves as the basic course in one of the four fields of the discipline. Students ordinarily will take at least one of these courses before proceeding to more advanced courses. Some advanced courses may require a particular introductory course as a prerequisite.

91. The American Political System (A). Theory and practice of American government and politics; federal-state relations; the separation and interrelationships of the executive, legislative, and judicial branches of government; judicial review; the role of political parties and public opinion; the formulation and execution of domestic and foreign policy; civil liberties. One course. *Staff*

91D. The American Political System (A). Same as Political Science 91 except instruction is provided in two lectures and one small discussion meeting each week. One course. *Staff*

92. Comparative Politics (B). Topics include problems of conceptualization and analysis; foundations of politics under democratic, authoritarian, and totalitarian regimes; theories of development and underdevelopment; revolution and collective violence; the role of elites, such as the military. C-L: Comparative Area Studies. One course. *Valenzuela*

93. Elements of International Relations (D). The nature of international politics, the analysis of national power, the instruments of foreign policy, and the controls of state behavior. C-L: Comparative Area Studies. One course. *Staff*

93D. Elements of International Relations (D). Same as Political Science 93 except instruction is provided in two lectures and one small discussion meeting each week. C-L: Comparative Area Studies. One course. *Staff*

94. Contemporary Political Ideologies (C). Liberalism, socialism, Marxism and its variants, fascism, contemporary democratic theory. One course. *Gillespie or Spragens*

OTHER UNDERGRADUATE COURSES

100. Duke University Overseas Semester (B). This number represents course credit for a political science course taken in Duke University exchange programs with overseas universities. One course. A. Free University of Berlin (Taught in German)

104. Politics and Literature (C). The enduring questions of politics and political philosophy illustrated in Western literature: historical, literary, and philosophical analysis. One course. *Booth or Gillespie*

106. International Security (D). Contemporary and future threats. Regional conflicts, the United States-Soviet strategic balance, theories of deterrence and defense, prospects for arms control. C-L: Comparative Area Studies. One course. *Staff*

107. Comparative Environmental Policies (B). Comparative analysis of environmental problems and policies in politically diverse industrialized nations including

the United States, Russia, and Japan. C-L: Comparative Area Studies and Public Policy Studies 107. One course. *McKean*

108. The American Presidency (A). The presidency and its impact on the American political system. One course. *Paletz*

109. State and Local Government Today (A). Problems in state, county, and city government. One course. *Leach*

110. The Americas: a Survey of the Forces Shaping the Hemisphere (B). See C-L: History 189; also C-L: Anthropology 189, Comparative Area Studies, Interdisciplinary Course 189, and Sociology 189. One course. *Bergquist*

111. Contemporary Japanese Politics (B). Introduction to political change in postwar Japan. Foundations of the modern industrial state, electoral politics, policy making and bureaucracy, defense, foreign policy, and foreign trade. C-L: Comparative Area Studies. One course. *McKean*

112S. Shaping the News (A). C-L: Public Policy Studies 186S. One course. *Barber*

113. International Political Economy (D). The interplay between politics and economics in international trade, money, investment, and technology flows among advanced capitalist societies, between developed and developing countries, and between capitalist and socialist countries. C-L: Comparative Area Studies. One course. *Grieco*

114. United States Foreign Policy and Latin America (D). The postwar period: the Alliance for Progress, counter-insurgency, human rights, Cuba. Particular attention to the United States response to Latin American democracies, dictatorships, and revolutionary movements. C-L: Comparative Area Studies. One course. *Valenzuela*

115. Politics and Society in West Germany (B). Industrialization, democratization, and fascism in Germany; social structure, political institutions, and political culture; selected public policies; West Germany in the world economy and in world politics. C-L: Comparative Area Studies. One course. *Kitschelt*

118. American Constitutional Development (A). Prerequisite: Political Science 91 or 91D or consent of instructor. One course. *Fish*

120. International Conflict and Violence (D). Nature and processes of international conflict and violence with emphasis on contemporary instances of violence in international affairs. Consideration of restraints on violence. C-L: Comparative Area Studies. One course. *Eldridge*

121. International Organization (D). Political aspects of military and economic organizations at the global and regional levels of the international system. C-L: Comparative Area Studies. One course. *Grieco*

122. Modern International Politics (D). The major problems in contemporary international affairs with attention to superpower politics, specific regional concerns, and the problems associated with the emergence of a new international economic order. C-L: Comparative Area Studies. One course. *Eldridge*

123. Introduction to Political Philosophy (C). The nature and enduring problems of political philosophy, illustrated by selected theorists in the Western political tradition. One course. *Gillespie or Spragens*

125. Strategies of Comparative Analysis (B). See C-L: Interdisciplinary Course 125; also C-L: Anthropology 125, Comparative Area Studies, History 137, and Sociology 125. One course. *Staff*

126. Theories of Liberal Democracy (C). Critical discussion of classic theorists, such as Locke, Rousseau, Mill, and Madison, and contemporary theories of liberal democracy. One course. *Spragens*

127. Law and Politics (A). Nature and functions of law; Anglo-American legal institutions; the process of judicial decision making; and the relationships among judges, lawyers, legislators, and administrators in the development of public as well as private law. One course. *Fish*

128. Congress and the Presidency (A). Policy making in the executive and legislative branches of the United States government, with particular attention to intra-governmental relations. One course. *Staff*

129. Political Participation (A). The motives, methods, and results of the activities of individuals and groups and of social movements. C-L: Women's Studies. One course. *Paletz*

131. Introduction to American Political Thought (C). Basic elements in the American political tradition as developed from its English roots to the present. One course. *Leach*

132. Politics of Asia (B). The impact of nationalism, development, and revolution on traditional Asian society and its emerging states. C-L: Comparative Area Studies. One course. *Lomperis*

135. Political Development of Western Europe (B). The development of the modern political systems of Britain, France, Germany, and other European countries; the spread of capitalism, the emergence of mass democracy and the rise of the welfare state. Contemporary developments examined in historical and theoretical perspective. C-L: Comparative Area Studies. One course. *Lange*

136. Comparative Government and Politics: Western Europe (B). Modern political institutions and processes of European democracies: political parties, interest groups and parliaments; regional, religious and class divisions; political participation and mobilization; relationships of state, society and economy; political, social and economic change in postwar Europe. C-L: Comparative Area Studies. One course. *Kitshelt or Lange*

137. Political Behavior in Elections (A). An introduction to voting and elections in the United States, with emphasis on presidential nomination and election procedures, characteristics of the American electorate, and theories of voting behavior in presidential and congressional elections. One course. *Staff*

138. Quantitative Political Analysis I (C). Basic applications of statistical methods to the analysis of political phenomena. Emphasis on research design, descriptive and inferential statistics, and use of computers. Not open to students who have had or are enrolled in Political Science 236, Economics 138, Mathematics 53 or 117, Psychology 117, Public Policy Studies 112 or 222, or Sociology 132, 133, or 293. One course. *Staff*

139. Bureaucracy and Public Policy (A). One course. *Staff*

141. Public Administration (A). An introduction to the role of administration in the governmental process considering principles of administrative organization, methods of administrative control, personnel, and fiscal management. In general, the study of the organizational and administrative problems encountered by any government agency charged with carrying out public policy. One course. *Staff*

143. Politics of Liberties (A). Theory and development of the Bill of Rights with attention to Supreme Court decisions and to cultural and political forces. Not open to students who have taken Political Science 100. One course. *Fish*

144S. American Political Thought since the Gilded Age (C). The Progressive period and the recurring themes of contemporary debate. Attempts to refurbish or develop alternatives to the dominant liberal tradition. The ideological roots of black, feminist, and conservative protest. One course. *Price*

145. Political Analysis for Public Policy Making (A). C-L: Public Policy Studies 114. One course. *Ascher or Entman*

146. American Legislative Behavior (A). An introduction to the American legislative process, with specific focus on the U.S. Congress. Emphasis on legislative rules and procedures, congressional elections, and the behavior of legislators in their representative and policy-making roles. One course. *Staff*

147. International Environmental Politics and Policies (D). Environmental issues in developing countries in the context of the North-South problem; transboundary pollution problems and international trade; problems of the global commons (such as the deep sea, the upper atmosphere, genetic resources); international organizations and environmental policy. C-L: Comparative Area Studies. One course. *McKean*

148. The Politics of American Business and Government in the International Economy (D). Major political forces which affect United States business operations abroad and the responses to the forces by business and the United States government. C-L: Comparative Area Studies. One course. *Grieco*

149. United States and East Asia (D). American military intervention in China, Korea, and Vietnam; contemporary United States relations with Japan, China, and other Asian nations; new trends and sources of tension in East Asia and the Pacific. C-L: Comparative Area Studies. One course. *McKean*

151. Introduction to Latin American Politics (B). Historical and cultural context of political institutions and behavior, the role of traditional and emerging groups and forces, political instability and the decision-making process. C-L: Comparative Area Studies. One course. *Valenzuela*

153, 154. Politics and the Media of Mass Communication 153 (B), 154 (A). Analysis of the nature, organization, and products of the mass media (especially the movie, television, and newspaper industries) as they affect the political systems, political processes, institutions, and people of the United States and other nations. Open to juniors and seniors. It is desirable but not required that students taking 153 continue with 154. With consent of the instructor, students who have not taken 153 may enroll in 154. C-L: Film. Two courses. *Paletz*

156. Space, Weapons, and War (D). Historical development of the relations between the exploration of space, antisatellite and other space weaponry, and theories of war in international politics. One course. *Roberts*

157. Foreign Policy of the United States (D). Sources of American foreign policy, containment, international economic policy, deterrence, arms control, and disarmament. Prospects for the future. Emphasis on the period since World War II. C-L: Comparative Area Studies. One course. *Holsti*

159. Ambition and Politics (C). A theoretical examination of the role of ambition in politics, including works by or on Plato, Plutarch, Machiavelli, Shakespeare, Madison, Tocqueville, and Hitler. One course. *Gillespie*

160. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy (D). C-L: Anthropology 109, Comparative Area Studies, History 109, Interdisciplinary Course 109, Religion 156, and Sociology 175. One course. *Staff*

161S. Comparative Government and Politics: Africa (B). Nationalism, nation building, and problems of development in sub-Saharan Africa. C-L: Comparative Area Studies. One course. *Johns*

163. Gender, Politics, and Policy: The Third World Case (B). A comparative analysis of precolonial, colonial, and postcolonial politics and distribution of political power between women and men. C-L: Comparative Area Studies. One course. *O'Barr*

165. Government and Politics of the Soviet Union (B). Analysis of the Soviet political system, emphasizing the sources of stability and instability and the responsiveness of its policies. Literature on the non-Soviet world (notably the United States) will be included. C-L: Comparative Area Studies. One course. *Hough*

166. Soviet Foreign Relations (D). Nature of relations with other states. Determinants and formulation of foreign policy. C-L: Comparative Area Studies. One course. *Hough*

167. International Law (D). Elements of international law, particularly as interpreted and applied by the United States; rights and duties of states with respect to recognition, state territory and jurisdiction, nationality, diplomatic and consular relations, treaties, treatment of aliens, pacific settlement of disputes, international regulation of the use of force, and collective responsibility. C-L: Comparative Area Studies. Not open to students who have had Political Science 227. One course. *Pye*

169. Politics in Revolutionary China (B). Political process in China since 1949, with emphasis on ideological shifts in the Cultural Revolution and the post-Mao era. Party politics, leadership, economic organization, thought reform, mass mobilization, and socialist transformation. China as an emerging world power. C-L: Comparative Area Studies. One course. *McKean*

171. Politics of South African Apartheid (B). The South African political system in the twentieth century, with particular attention to the economic and ethnic roots of racial conflict. United States-South African relations. C-L: Comparative Area Studies. One course. *Johns*

172. Political Economy of Global Natural Resources (B). Analysis of mineral and energy policies of selected countries. Focus upon relationships between producer and consumer countries, transnational corporations, and international cartels. C-L: Comparative Area Studies. One course. *Johns*

173S. Political Economy of World Food Problems (B). Changing policies toward food production and distribution. Topics include American agricultural policy, international food and famine aid, and Third World agricultural development strategies. C-L: Comparative Area Studies. One course. *Johns*

174S. Political Biography (A). Nature of politics as revealed in the life histories of individuals. Readings in single biographies and autobiographies, but with some comparative work. Students project their autobiographies toward possible political futures. One course. *Barber*

175. Political Parties and Legislatures in Western Democracies (B). The origin, maintenance, and functions of party and legislative systems in Western democratic societies. C-L: Canadian Studies and Comparative Area Studies. One course. *Kornberg*

176A. Perspectives on Food and Hunger (B). See C-L: Interdisciplinary Course 120A; also C-L: Comparative Area Studies. One course. *Johns*

176B. Perspectives on Food and Hunger (B). See C-L: Interdisciplinary Course 120B; also C-L: Comparative Area Studies. One course. *Johns*

177, 178. Contemporary Social and Political Development in the Islamic World (B). An analysis of contemporary events in Iran, Afghanistan, Pakistan, Iraq, and the Arabian Peninsula; the political manifestation of Shi'ia and Sunni Islam; the role of imams and ayatollahs in the politics of Muslim countries; considerations of security in the Arab world and its relationship to global power politics. C-L: Comparative Area Studies. Two courses. *Braibanti*

180. Media in Comparative Perspective (B). See C-L: Interdisciplinary Course 182; also C-L: Comparative Area Studies and Sociology 182. One course. *Paletz or Smith*

184. An Introduction to Canada and Canadian Issues (B). See C-L: Interdisciplinary Course 184; also C-L: Canadian Studies 184, Comparative Area Studies, Economics 184, and History 184. One course. *Leach*

186. Political Leadership (A). The development, characteristics, and impact of political leaders. Biographical and collective studies are considered primarily from a psychological perspective. One course. *Barber*

187. Politics and the Libido (A). Effects of the libido on elite and mass political activities. Government regulation of sex-inspired behavior. C-L: Women's Studies. One course. *Paletz*

188. The Psychology of Political Symbols (A). The role of symbolic political issues in determining public attitudes and voting behavior. Symbolic political issues such as "law and order," pornography, and prohibition; distinguished from public welfare issues such as employment policies. One course. *McConahay*

189, 190. Internship (A). Open to enrollment by students engaging in practical or governmental work experience during the summer or a regular semester. To enroll, a student must obtain the approval of the Director of Undergraduate Studies, arrange employment, and secure the agreement of a faculty member in the department to supervise a program of study related to the work experience. Two courses. *Johns*

191, 192. Independent Study (A,B,C, or D). Directed reading and research. Open only to qualified juniors by consent of the Director of Undergraduate Studies and of the supervising instructor. Two courses. *Staff*

193, 194. Independent Study (A,B,C, or D). Directed reading and research. Open only to seniors by consent of the Director of Undergraduate Studies and of the supervising instructor. Two courses. *Staff*

195. Comparative Political Behavior in the United States and Canada (B). Similarities and differences in political environments and their impact on political institutions and processes. C-L: Canadian Studies and Comparative Area Studies. One course. *Kornberg*

196(I-IV). American University Washington Semester (A). This number represents transfer course credit for courses taken at American University in the Washington Semester Program: Washington Semester Seminar I, Washington Semester Seminar II, Washington Semester Internship, and an elective or research project. If any of the above courses at American University are taken outside the political science department, approval must be obtained beforehand from the Director of Undergraduate Studies of the appropriate Duke department in order to obtain transfer credit. Four transfer credits.

199. Special Topics in Government and Politics. Topics vary from semester to semester. One course each. *Staff*

A. American Government and Politics

B. Comparative Government and Politics

- C. Political Theory
- D. International Relations

For Seniors Only

197S-198S. Senior Honors Thesis. Preparation and writing of research paper; group meetings to present topics and for discussion. Open only to senior political science majors in the honors program. See section on honors under description of the major. Two courses. *Staff*

200S. Senior Seminars. Open also, if places are available, to qualified juniors who have earned a 3.0 average and obtained the consent of the instructor. One course each. *Staff*

- A. American Government and Politics
- B. Comparative Government and Politics
- C. Political Theory
- D. International Relations

For Seniors and Graduates*

201S. Problems in International Security (D). Major security issues. Prerequisite: a course in international relations or American foreign policy. C-L: Comparative Area Studies. One course. *Staff*

203S. Politics and the Media of Mass Communication (A). Analysis of crucial aspects of the media-politics relationship. Media's effects on political socialization, public opinion, political participation, pluralism, power, and authority. Government's impact on the media. Prerequisite: consent of instructor. C-L: Film. One course. *Paletz*

204S. Ethics in Political Life (C). Ethical issues arising in the conduct of political vocations and activities. C-L: Public Policy Studies 204S. One course. *Spragens*

207S. American Constitutional Interpretation (A). Development of the Constitution of the United States through Supreme Court decisions. One course. *Fish*

208S. Analyzing the News (A). C-L: Public Policy Studies 240S. One course. *Entman*

209. Problems in State Government and Politics (A). One course. *Leach*

211S. Current Problems and Issues in Japanese Politics (B). Sources of strength and weakness in the Japanese economy, the rise of new issues and strains in post-industrial society, changes in the party system and decision-making process, the possible transfer of power, the challenge of Japan's new world role. C-L: Comparative Area Studies. One course. *McKean*

212S. Domestic Structures and Foreign Policies of Advanced Democratic States (D). The influence of democratic institutions on the national-security and foreign-economic policies of advanced industrialized states. One course. *Grieco*

213S. Theories of International Political Economy (D). Comparison and assessment of traditional and modern theories in terms of their logical and empirical validity. C-L: Comparative Area Studies. One course. *Grieco*

214S. The Politics of Scarcity (B). Issues in politics, economics, ethics, and policy associated with conflicts arising from long-term scarcity in crucial resources. One course. *McKean*

*The following courses may be taken by juniors who have earned a 3.0 average and obtained the consent of the instructor.

216S. Evolution of European Marxism (C). The central themes in the evolution of European Marxism: socialist thought prior to Marx; the writings of Marx and Engels. The themes are articulated in: Russian Marxism; Soviet Communism and its Marxist critics; the rethinking of Marx's political economy, the theory of the state, and concepts of class consciousness in the works of twentieth-century European Marxists. One course. *Booth*

218S, 219S. Political Thought in the United States (C). 218S: the Founders and their European and Puritan antecedents; debates over slavery and the Union. 219S: topics in late nineteenth- and twentieth-century thought. Two courses. *Price*

220S. Problems in International Politics (D). Prerequisite: one course in international relations, foreign policy, or diplomatic history. C-L: Comparative Area Studies. One course. *Holsti or Hough*

223. Ancient Political Philosophy (C). Intensive analysis of the political philosophy of Plato, Aristotle, and other ancient theorists. One course. *Gillespie*

224S. Modern Political Theory (C). A historical survey and philosophical analysis of political theory from the beginning of the seventeenth to the middle of the nineteenth century. The rise of liberalism, the Age of Enlightenment, the romantic and conservative reaction, idealism, and utilitarianism. One course. *Spragens*

225. Topics in Comparative Government and Politics: Western Europe (B). Topics vary: the development of mass democracy and the welfare state; political and electoral participation and mobilization; social movements and political change; center-periphery conflicts; government and bureaucratic institutions and their relationships to society; the modern welfare state and political economy. C-L: Comparative Area Studies. One course. *Kitschelt or Lange*

226S. Theories of International Relations (D). An overview with applications to political-military and political-economic empirical problems. C-L: Comparative Area Studies. One course. *Grieco*

227. International Law (D). Theory and practice of international law: rights and duties of states with respect to recognition, state territory and jurisdiction, treaties, settlement of disputes, and other topics. C-L: Comparative Area Studies. One course. *Pye*

228S. Nineteenth and Twentieth Century Political Philosophy (C). Topics in nineteenth and twentieth century political philosophy, considering such authors as Hegel, Marx, Nietzsche, Dostoevski, Heidegger, Malraux, and Camus. One course. *Gillespie*

229S. Contemporary Theory of Liberal Democracy (C). One course. *Spragens*

232. Political Economy: Theory and Applications to Western Europe (B). Selected topics. C-L: Comparative Area Studies. One course. *Lange*

233S. Quantitative Political Analysis II (C). Intermediate statistical methods, especially linear regression, for political science research. Emphasis on assumptions and interpretations of results. Prerequisite: Political Science 138 or 236 or equivalent. One course. *Staff*

234S. Political Economy of Development: Theories of Change in the Third World (B). Alternative approaches to political, economic, and social change in Latin America, Africa, and Asia. C-L: Anthropology 234S, History 234S, Interdisciplinary Course 234S, and Sociology 234S. One course. *Bergquist, Fox, Gereffi, Smith, or Valenzuela*

235S. Comparative Development of Islam (B). Comparative development of Islam in Indonesia, Malaysia, Pakistan, India, North Africa, and sub-Saharan Africa.

A comparative analysis of the resurgence of Islam as a religious, political, and cultural force. C-L: Comparative Area Studies. One course. *Braibanti*

236. Statistical Analysis (C). Introduction to statistics in political research, emphasizing research design, descriptive and inferential statistics, and use of computers. Not open to students who have had or are enrolled in Political Science 138, Economics 138, Mathematics 53 or 117, Psychology 117, Public Policy Studies 112 or 122, or Sociology 132, 133, or 293. One course. *Staff*

237S. Comparative Public Policy (B). Introduction to methods, concepts, and theories of comparative public policy analysis. Substantive policies examined in the course vary each semester and may include economic, industrial, social, and civil rights policies. One course. *Kitschelt*

240. American Political Behavior (A). One course. *Staff*

242S. Comparative Law and Policy: Ethnic Group Relations (B). Prerequisite: consent of instructor. C-L: Comparative Area Studies, Law 572, and Public Policy Studies 242S. One course. *Horowitz*

245. Ethics and Policy Making (C). C-L: Public Policy Studies 223. One course. *Price or Kuniholm*

248. The Politics of the Policy Process (A). C-L: Public Policy Studies 219. One course. *Entman*

249. Comparative International Development and Technology Flow (B). Analysis of social, political, and economic development in Third World countries. The internal problem of maintaining political systems and the external problem of adapting intermediate or appropriate technologies. C-L: Comparative Area Studies. One course. *Braibanti*

251S. The American Presidency (A). One course. *Paletz*

253S. Comparative Government and the Study of Latin America (B). Current literature on major themes of Latin American politics. C-L: Comparative Area Studies. One course. *Valenzuela*

255. Political Sociology (B). C-L: Sociology 255. One course. *Smith, Stark, or Tiryakian*

256S. Arms Control and National Security Policy (D). The evolution of nuclear weapons and strategy and of global defense policy toward the Soviet Union and other adversaries; the arms control process and nonproliferation. Prerequisite: consent of instructor. One course. *Lomperis*

259S. Low Intensity Conflict and the Lessons of Viet Nam (D). The Viet Nam conflict and comparative cases; implications for Western interventions in the Third World. Prerequisite: consent of instructor. One course. *Lomperis*

260. The Tradition of Political Inquiry (C). Past and present problems, goals, presuppositions, and methods. One course. *Spragens*

261. Politics and the Future (D). The projection of possible political orders: the effects of changing resources, technologies, and values on mankind's ability to govern. One course. *Lomperis*

263S. Methods of Political Science (C). The relation between theory and evidence; research designs for the comparative analyses of historical and statistical evidence. One course. *Roberts*

264. The President and the Federal Bureaucracy (A). Presidential management of the executive branch, including the development of the modern institutional pres-

idency; an analysis of bureaucratic politics, its causes and effects; and an examination of executive-legislative relations in managing the bureaucracy. One course. *Staff*

267S. Policy Making in International Organizations (D). C-L: Comparative Area Studies and Public Policy Studies 267S. One course. *Ascher*

275. The American Party System (A). An intensive examination of selected facets of American national political parties, such as relationships between presidential and congressional politics, the politics of national conventions, recent foreign policy and party alignments, and the controversy over party government. One course. *Kornberg*

277. Comparative Party Politics (B). The impact of social and political systems on party structures, functions, ideologies, and leadership recruitment. Emphasis upon research techniques and objectives. C-L: Comparative Area Studies. One course. *Kornberg or Lange*

280S. Comparative Government and Politics: Sub-Saharan Africa (B). Politics and government in selected African states, with particular attention to the problems of decolonization and modernization in the postindependence period. Prerequisite: Political Science 161 or consent of instructor. C-L: Comparative Area Studies. One course. *Staff*

282S. Canada (B). See C-L: Interdisciplinary Course 282S; also C-L: Anthropology 282S, Canadian Studies, Comparative Area Studies, History 282S, and Sociology 282S. One course. *Leach*

283S. Congressional Policy Making (A). Lawmaking and oversight of the executive branch by the U.S. Congress. Committee, party, executive, and interest group roles. C-L: Public Policy Studies 283S. One course. *Price*

284S. Public Policy Process in Developing Countries (B). C-L: Comparative Area Studies and Public Policy Studies 284S. One course. *Ascher*

286S. Judicial Administration (A). Organization, case processing, and management of courts with emphasis on federal appellate courts. Prerequisite: Political Science 127. C-L: Law 534. One course. *Fish*

293. Federalism (B). Theoretical and operational aspects of federal systems of government, focusing on the United States and Canada. C-L: Canadian Studies and Comparative Area Studies. One course. *Leach*

COURSES CURRENTLY UNSCHEDULED

262S. International Communism (D)

POLITICAL INTERNSHIPS

The department administers an internship program, primarily in Washington, DC, for political science majors and interested nonmajors. Students participate by qualifying for a position obtained by the department or by acquiring their own relevant employment, with or without compensation. Course credit can be obtained by enrolling in Political Science 189 or 190 and writing an analytical paper. Potential applicants should contact the Internship Director, Louise Walker (327 Perkins), at any time, but preferably in the fall semester.

POLITICAL SCIENCE COURSES BY FIELDS

Political science courses for undergraduates are offered in four fields. The courses in each of the four fields are listed below; in the course descriptions above, the field in which each course falls is indicated by the appropriate symbol (A, B, C, or D).

Students majoring in the department must complete at least one course in each of three fields.

American Government, Politics, and Public Administration (A). Political Science 91, 91D, 108, 109, 112S, 118, 127, 128, 129, 137, 139, 141, 143, 145, 146, 154, 174S, 186, 187, 188, 189, 190, 191,* 192,* 193,* 194,* 196, 197S-198S,* 199A, 200S A, 203S, 207S, 208S, 209, 240, 248, 251S, 264, 275, 283S, 286S.

Comparative Government and Politics (B). Political Science 92, 100A, 107, 110, 111, 115, 125, 132, 135, 136, 151, 153, 161S, 163, 165, 169, 171, 172, 173S, 175, 176, 176A, 176B, 177, 178, 180, 184, 191,* 192,* 193,* 194,* 195, 197S-198S,* 199B, 200S B, 211S, 214S, 225, 232, 234S, 235S, 237S, 242S, 249, 253S, 255, 277, 280S, 282S, 284S, 293.

Political Theory and Methodology (C). Political Science 94, 104, 123, 126, 131, 138, 144S, 159, 191,* 192,* 193,* 194,* 197S-198S,* 199C, 200S C, 204S, 216S, 218S, 219S, 223, 224S, 228S, 229S, 233S, 236, 245, 260, 263S.

International Law, Relations, and Politics (D). Political Science 93, 93D, 106, 113, 114, 120, 121, 122, 147, 148, 149, 156, 157, 160, 166, 167, 191,* 192,* 193,* 194,* 197S-198S,* 199D, 200S D, 201S, 212S, 213S, 220S, 226S, 227, 256S, 259S, 261, 262S, 267S.

THE MAJOR

Requirements. Eight courses in political science including (1) at least one course in each of three fields; (2) at least one course at the 200 level; and (3) no more than three cross-listed courses originated outside the Department of Political Science. Such courses cannot be used to meet the major requirements in both political science and also in another department. (Cross-listed courses appear in the preceding listing without descriptions.)

Of the eight required political science courses, at least six must be taken at Duke to meet major requirements, five if the student: (1) is transferring courses from a year-long approved study abroad program; or (2) transferred to Duke after completing two undergraduate years at another institution; or (3) completed one semester at an approved study abroad program and one semester at the Washington Semester Program at American University. For the purpose of this requirement courses in the Washington Semester Program at American University or in the Duke University Overseas Semester will be counted as transfer courses.

Suggested Work in Related Disciplines. Several courses in such disciplines as anthropology, economics, history, philosophy, psychology, public policy, religion, and sociology are desirable.

Honors. The department offers students majoring in political science a senior honors program, by successful completion of which a participant achieves graduation with distinction in political science. The central feature and requirement of the program is the honors thesis which the student prepares under faculty supervision. Students who have attained at least a 3.3 grade average overall and a 3.5 average in political science courses may enter the program by submitting, prior to the end of the second semester of the junior year, a research proposal to the departmental honors committee and also obtaining consent of a faculty member to supervise the proposed thesis. In the first semester of the senior year, accepted students take Political Science 197S with emphasis on research methods. The following semester they take Political Science 198S during which their thesis is written, presented orally, and evaluated by the honors committee. Graduation with distinction is awarded to students receiving a grade of A- or better. Further information may be obtained from the chairman of the honors committee or the Director of Undergraduate Studies.

Psychology (PSY)

Professor Staddon, *Chairman*; Professor R. Erickson, *Director of Undergraduate Studies*; Professors Alexander, Borstelmann, Carson, Coie, Costanzo, Diamond, C. Erickson,

W. G. Hall, Martin Lakin, Lockhead, M. Wallach, Wing, and Wolbarsht; Associate Professors Casseday, Day, Eckerman, W. C. Hall, Holland, McConahay, Roth, and Rubin; Assistant Professors Dix, Fitzpatrick, Kremen, and Putallaz; Professors Emeriti Kimble and H. Schiffman; Associate Professor Emeritus Banham; Adjunct Professors Brodie, Brounstein, Crovitz, and S. Schiffman; Adjunct Associate Professor Thompson; Adjunct Assistant Professor Lochman; Lecturers Barnes, Basowitz, Clark, Cofer, Cooper, B. Erickson, King, Musia Lakin, Marsh, Page, Payne, Sawyer, Shepard, and L. Wallach

GENERAL COURSES

11. Introductory Psychology. Biological bases of behavior, psychological development, cognitive psychology, personality, abnormal behavior, and social psychology. Designed as a broad introduction to psychology for nonmajors as well as majors; not required for the major. Students are expected to participate as subjects in three to six hours of psychological research. One course. *Staff*

117. Statistical Methods. Elementary statistical techniques and their application to the analysis and interpretation of social science data. Theory of inference is stressed. Not open to students who have had Economics 138 or Mathematics 53, 117, or 136. C-L: Sociology 133. One course. *Staff*

181S. Art and Its Making. An inquiry into artistic process from a conceptual survey of dominant views to direct interviewing of and discussion with artists. Prerequisites: junior or senior standing and consent of instructor. C-L: Institute of the Arts 181S and Interdisciplinary Course 181S. One course. *Kremen*

204S. Great Ideas in Psychology. Ideas in psychology drawn from various content areas (e.g., perception, personality, motivation, biological bases, social, cognitive, developmental, learning, clinical) and various methodological approaches (e.g., experimental, introspection, observation, interview, longitudinal, simulation). Prerequisite: must be a junior or senior psychology major or have graduate status. One course. *Day*

273S. Statistical Principles in Experimental Design. The problems of scientific inference; methods of data analysis and issues in experimental design. One course. *Roth*

Only one of the following general courses may apply toward the area of concentration a student chooses in the major (see below), depending on content as determined by the Director of Undergraduate Studies:

170S. A-J. Selected Problems. New courses not yet in the bulletin are designated as 170S or 270S depending on their level. Since all faculty offer these courses, their contents vary accordingly. Different courses indicated by the letter. One course. *Staff*

171T. A-J. Tutorials. Small group discussions about influential books and articles in psychology. The availability of tutorials, their content, and the instructors will be announced before registration. Prerequisite: consent of Director of Undergraduate Studies. Open to juniors and seniors. Pass/fail grading only. Half course. *Staff*

191, 192, 193, 194. Independent Study. Directed reading and research. 191, 192: junior year fall, spring; 193, 194: senior year fall, spring. Prerequisite: consent of instructor and Director of Undergraduate Studies. One course each. *Staff*

270S. A-J. Selected Problems. New courses not yet in the bulletin are designated as 170S or 270S depending on level. Since all faculty offer these courses, their contents vary accordingly. Different courses indicated by the letter. One course. *Staff*

The courses below are listed by areas of concentration in psychology. Some courses are included in several areas. These major areas provide a framework for the curriculum, described in detail in THE MAJOR below.

BIOLOGICAL BASES OF BEHAVIOR

98. Introduction to the Neurosciences. Fundamentals of the field, especially as it relates to behavior. Provides the background for Interdisciplinary Course 200 and Psychology 200. Designed for the general student interested in the neurosciences. C-L: Interdisciplinary Course 98. One course. *R. Erickson and staff*

103. Biological Bases of Behavior: Introduction and Survey. Physiological, developmental, and evolutionary approaches to behavior. Sensory and cognitive processes, sleep, pain, emotion, hunger, and thirst as well as maternal and sexual behavior patterns. Prerequisite: none, but an introductory course in psychology or biology desirable. One course. *C. Erickson or W. G. Hall*

111. Learning and Adaptive Behavior. Principles of instrumental learning in animals and humans. Prerequisite: none, but some knowledge of quantitative science desirable. One course. *Staddon*

118. The Psychology of Individual Differences. Nature and causes of individual and group variations in intelligence, special abilities, social and emotional characteristics. Prerequisite: Psychology 117 or consent of the instructor. One course. *Wing*

126. Behavior and Neurochemistry. The role of brain chemicals (neurotransmitters, peptides, and hormones) in behavior. Hypotheses addressing the neurobiology of mental disorders. Prerequisite: Psychology 103. One course. *Cooper*

139. Motivation. The psychobiology of such concepts as motivation, drive, incentive, reward, and goal-directed behavior. The neural mechanism; developmental perspectives. Prerequisite: Psychology 102 or 103. One course. *W. G. Hall*

141S. Tests and Measurements. Test methods used by psychologists to measure and evaluate mental processes. Prerequisites: Psychology 117 or equivalent. One course. *Wing*

150S. Hormones and Behavior. The endocrine system and hormones in aggressive, sexual, and emotional behavior. Prerequisite: Psychology 103. C-L: Women's Studies. One course. *B. Erickson*

155S. Perinatal Behavior. Consideration of behavior patterns of animals and humans before and just after birth, their neural organization, and the way that they are influenced by experience. Prerequisites: Psychology 103 and consent of the instructor. One course. *W. G. Hall*

156S. Biological Psychology. The neural basis of behavior with special emphasis on the localization of function. An historical approach, using original papers by Campbell, Lashley, Kluver, Schaefer, and Munk. While emphasis is on the neocortical sensory systems, the structure and function of the limbic system and hypothalamus are reviewed. C-L: Anatomy 156S. One course. *Diamond*

158S. Electroencephalogram and Psychological Function. A survey of experimental and clinical literature on brain wave correlates of intelligence, personality, behavior disorders, epilepsy, sleep, sensory stimulation, reaction time, and attention. Emphasis on the electrophysiology of conditioning and learning. One course. *Marsh*

159S. Biological Psychology of Human Development. Multidisciplinary perspectives bearing on key processes in human development from infancy through old age; the way that biological and psychological processes act together in normal and pathological behavior and development. Clinical case material and video tapes. Preference given to senior psychology majors and to students in the Program in Human Development. Prerequisite: consent of instructor. One course. *Thompson*

166S. Comparative Neurobiology. The evolution and functional organization of the vertebrate brain. A study of the original papers of the pioneers in comparative anatomy. Prerequisite: consent of instructor. C-L: Anatomy 166S. One course. *Diamond and W. C. Hall*

167S. Brain Mechanisms of Behavior. General physiological principles of brain organization in relation to behavioral processes from sensation to concept formation. Discussions of original readings from seminal papers in the early nineteenth century to the present. One course. *R. Erickson*

200. Advanced Behavioral Neuroscience I. Basic neuroanatomy and neurophysiology, physiology of the neuron and neural networks, neurotransmitter functions, sensory and motor systems. Prerequisite: Interdisciplinary Course 98. C-L: Interdisciplinary Course 200. One course. *N. Cant and staff*

201. Advanced Behavioral Neuroscience II. Integrative activities of the nervous system: sensory-motor relationships, neuroendocrine relationships, emotion and motivation, sleep, learning and memory, diseases of the nervous system and their psychological correlates. Prerequisite: Interdisciplinary Course 200 or Psychology 200. C-L: Interdisciplinary Course 201. One course. *R. Erickson and staff*

207S. Topics in Psychobiology. The biological substrates of human behavior in health and disease. Drug abuse, alcoholism, depression, schizophrenia, and human aggression. Films and videotapes. Student presentations; patient interviews. Prerequisite: senior standing and consent of instructor. Natural Sciences or Social Sciences. C-L: Distinguished Professor Course 207S. One course. *Brodie*

216S. Biological Psychology. Same as 156S except additional term paper required. C-L: Anatomy 216S. One course. *Diamond*

219S. Physiological Foundations of Psychology. Structure and function of the nervous system as related to problems of sensory-motor processes, learning, motivation, and memory. One course. *C. Erickson and R. Erickson*

230S. Social Behavior of Animals. Developmental, ecological, and physiological aspects of territorial, sexual, parental, and aggressive behavior. One course. *C. Erickson*

238S. Electroencephalogram and Psychological Function. Same as 158S, except additional term paper required. One course. *Marsh*

255S. Perinatal Behavior. Same as 155S, except additional term paper required. One course. *W. G. Hall*

266S. Comparative Neurobiology. Same as 166S except additional term paper required. C-L: Anatomy 266S. One course. *Diamond and W. C. Hall*

267S. Brain Mechanisms of Behavior. Same as 167S, except additional term paper required. One course. *R. Erickson*

272S. Physiology of the Central Nervous System. The central processing of sensory information, motor control, ions, and electric activity in the central nervous system, and pathologic changes of function; an intensive advanced seminar. Prerequisite: consent of instructor. C-L: Physiology 272S. Half or one course. *Somjen and staff*

285S. Developmental Psychobiology. The development of motivation, learning, and reward mechanisms and their neurobiological basis. Animal studies and some human work. Prerequisites: Psychology 103, an upper level course in psychobiology, and consent of instructor. One course. *W. G. Hall*

286S. Biological Basis of Hearing. Anatomy and physiology of the auditory system; neural mechanisms for localization of sound, frequency discrimination, and

discrimination of temporal patterns of sound such as speech; disorders of hearing. One course. *Casseday*

COGNITIVE PSYCHOLOGY

107. Cognitive Psychology: Introduction and Survey. Overview of cognitive processes including pattern recognition, concept formation, attention, memory, imagery, language, problem solving, and thinking. Emphasis both empirical and theoretical. Prerequisite: none, but Psychology 11 desirable. One course. *Day*

111. Learning and Adaptive Behavior. Principles of instrumental learning in animals and humans. Prerequisite: none, but some knowledge of quantitative science desirable. One course. *Staddon*

112. Sensation and Perception. Principles of organization of perceptual systems, including sensory systems (vision, audition, proprioception, and chemical senses); pattern recognition; perceptual anomalies; attention; methods of measurement. One course. *Lockhead*

118. The Psychology of Individual Differences. Nature and causes of individual and group variations in intelligence, special abilities, social and emotional characteristics. Prerequisite: Psychology 117 or consent of instructor. One course. *Wing*

134. Psychology of Language. Psychological "reality" of linguistic structures, language and cognition, biological bases, animal communication, language pathologies, nonverbal communication, language versus music, linguistic universals, and bilingualism. Everyday language phenomena (e.g., slips of the tongue) as well as the experimental and theoretical literature. Prerequisite: Psychology 107 desirable. C-L: Linguistics. One course. *Day*

141S. Tests and Measurements. Test methods used by psychologists to measure and evaluate mental processes. Prerequisite: Psychology 117 or equivalent. One course. *Wing*

143S. Experimental Methods in Cognitive Psychology. Human cognition; language, memory, problem solving, and other higher mental processes. Prerequisite: Psychology 107 or 112. One course. *Rubin or Lockhead*

148S. Experimental Methods in Sensation and Perception. Experimental approaches to basic phenomena of perception as determined by conditions in the external situation and the person: biological and psychological. Prerequisite: Psychology 112 or consent of instructor. One course. *Lockhead*

160S. Human Memory. Classical and modern literature, data, and theories relating to mechanisms of information processing, storage, and retrieval. One course. *Rubin*

161S. Modern Learning Theory. The relation of modern viewpoints on the learning process to traditional ones; topics include animal and human learning. One course. *Holland*

167S. Brain Mechanisms of Behavior. General physiological principles of brain organization in relation to behavioral processes from sensation to concept formation. Discussions of original readings from seminal papers in the early nineteenth century to the present. One course. *R. Erickson*

203S. Sensation and Perception. Classical and current concepts and methods. Prerequisite: consent of instructor. One course. *Lockhead*

210S. Cognition. Schematic view of cognitive psychology plus intensive study of two to three specific research topics such as forms of representation, individual

differences, and problem solving models. Emphasis on alternative experimental and theoretical approaches. Prerequisite: Psychology 107 or graduate status. One course. *Day*

212S. Human Memory. Same as 160S, except additional term paper required. One course. *Rubin*

215S. Cognitive Development. Intensive critical evaluation of major approaches to the development of knowledge, including those of Piaget, Thomas Kuhn, Vygotsky, Eleanor Gibson, Kohlberg, and others. One course. *L. Wallach*

220S. Psycholinguistics. Selected topics such as neurolinguistics, linguistic versus pictorial representation, individual differences, oral versus written expression, language and personality, and the language-thought interaction. Prerequisite: Psychology 134 or graduate status. One course. *Day*

261S. Modern Learning Theory. Same as 161S, except additional term paper required. One course. *Holland*

267S. Brain Mechanisms of Behavior. Same as 167S, except additional term paper required. One course. *R. Erickson*

286S. Biological Basis of Hearing. Anatomy and physiology of the auditory system; neural mechanisms for localization of sound, frequency discrimination, and discrimination of temporal patterns of sound such as speech; disorders of hearing. One course. *Casseday*

DEVELOPMENTAL PSYCHOLOGY

105. Developmental Psychology: Introduction and Survey. Theory and research on growth and behavior from infancy to adolescence. One course. *Borstelman, Dix, or Putallaz*

130. Psychosocial Aspects of Human Development. The connectedness of societal, behavioral, and biological components of normal development from childhood through old age; society as the context in which individuals develop over the lifespan. Introductory work in anthropology, psychology, or sociology recommended. C-L: Human Development, Interdisciplinary Course 130, and Sociology 169. One course. *Martin Lakin and Maddox*

136. Advanced Developmental Psychology. Issues, concepts, and methods in psychological development, e.g., comparative social development, social cognition, adolescence. Prerequisite: Psychology 105 or consent of instructor. One course. *Staff*

139. Psychobiology of Motivation. The psychobiology of such concepts as motivation, drive, incentive, reward, and goal-directed behavior. The neural mechanism; developmental perspectives. Prerequisite: Psychology 102 or 103. One course. *W. G. Hall*

140S. Research Methods in Developmental Psychology. Prerequisite: Psychology 105 or consent of the instructor. One course. *Eckerman or L. Wallach*

142S. Child Observation. Observation of children in the group setting of the University Preschool and Primary Program. Aspects of personality, social development, and child-adult relationships. Open only to junior and senior psychology majors with consent of instructor. One course. *Musia Lakin*

151S-152S. Child Clinical Psychology. Theories of clinical intervention with children and families; research on prediction of adult disorders from childhood problems, evaluation of therapy and epidemiological data. Practicum with children in

schools, coupled with in-class training. Prerequisites: Psychology 105 and 119. 151S: fall semester, one course. 152S: spring semester, half course. *Coie*

153S. Child Rearing: Theories, Research, Realities. Analysis of issues, concepts, and studies on determinants of general trends and individual variations in the care and training of children from infancy to adolescence. Prerequisite: Psychology 105; Psychology 117 and 140 recommended. One course. *Borstelmann or Dix*

154S. Education, Children, and Poverty. Psychological hypotheses concerning the roles of preschool intervention programs, improved quality of resources, teacher expectancy effects, and enhancement of pupil self-confidence, in relation to the goal of improved cognitive competence for poverty background children. Criteria for defining competence, such as scores on psychometric intelligence tests, performing on Piagetian tasks, and development of specific skills. Prerequisite: one course in psychology or consent of instructor. One course. *M. Wallach*

155S. Perinatal Behavior. Consideration of behavior patterns of animals and humans before and just after birth, their neural organization, and the way that they are influenced by experience. Prerequisites: Psychology 103 and consent of instructor. One course. *Hall*

157S. Social Development of Children. The study of the child's social self; specifically, how children's social behavior changes developmentally and what factors influence the development of that behavior. One course. *Coie or Putallaz*

159S. Biological Psychology of Human Development. Multidisciplinary perspectives bearing on key processes in human development from infancy through old age; the way that biological and psychological processes act together in normal and pathological behavior and development. Clinical case material and video tapes. Preference given to senior psychology majors and to students in Program in Human Development. Prerequisite: consent of instructor. One course. *Thompson*

214S. Development of Social Interaction. Major concepts and methods pertaining to early social development, emphasizing human social behavior and a developmental psychobiological approach. One course. *Eckerman*

215S. Cognitive Development. Intensive critical evaluation of major approaches to the development of knowledge, including those of Piaget, Thomas Kuhn, Vygotsky, Eleanor Gibson, Kohlberg, and others. One course. *L. Wallach*

230S. Social Behavior of Animals. Developmental, ecological, and physiological aspects of territorial, sexual, parental, and aggressive behavior. One course. *C. Erickson*

231S. Parent-Child Interaction. Examination of the empirical literature on parent-child interaction with emphasis on factors regulating parent behavior, individual differences in parenting, outcomes in children associated with different types of parenting, issues involved in compliance and internalization, and breakdown of normal parent-child behavior patterns. One course. *Dix*

255S. Perinatal Behavior. Same as 155S, except additional term paper required. One course. *W. G. Hall*

285S. Developmental Psychobiology. The development of motivation, learning, and reward mechanisms and their neurobiological basis. Animal studies and some human work. Prerequisite: Psychology 103, an upper level course in psychobiology, and consent of instructor. One course. *W. G. Hall*

PERSONALITY/SOCIAL PSYCHOLOGY

108. Personality and Social Behavior: Introduction and Survey. The determinants of socially significant human behavior—those residing in the person, those

that are the product of interpersonal context, and those resulting from the interaction of both sources. Formative as well as contemporary influences considered. One course. *Staff*

110. Applied Psychology. Applications of psychology to problems of personnel selection, industrial efficiency, advertising, and selling. Prerequisite: Psychology 117 or equivalent. One course. *Wing*

114. Personality. Representative theories of personality from Freud to the present, emphasizing problems of normal personality structure, dynamics, development, and assessment. One course. *Alexander or Kremen*

116. Social Psychology. Problems, concepts, and methods in the study of social interaction and interpersonal influence. C-L: Sociology 106. One course. *Costanzo or George*

118. The Psychology of Individual Differences. Nature and causes of individual and group variations in intelligence, special abilities, social and emotional characteristics. Prerequisite: Psychology 117 or consent of the instructor. One course. *Wing*

119. Abnormal Psychology. Disordered behavior and constructive personality change viewed in interpersonal and social context for purposes of understanding normal and abnormal personality development and functioning. One course. *Carson*

126. Behavior and Neurochemistry. The role of brain chemicals (neurotransmitters, peptides, and hormones) in behavior. Hypotheses addressing the neurobiology of mental disorders. Prerequisite: Psychology 103. One course. *Cooper*

141S. Tests and Measurements. Test methods used by psychologists to measure and evaluate mental processes. Prerequisite: Psychology 117 or equivalent. One course. *Wing*

145S. Experimental Approaches to Personality. Methods applied to personality research. Prerequisite: one course in psychology. One course. *M. Wallach or Wing*

147S. Experimental Social Psychology. Group dynamics, attitude change, and interpersonal perception. Prerequisite: Psychology 116. One course. *Staff*

150S. Hormones and Behavior. The endocrine system and hormones in aggressive, sexual, and emotional behavior. Prerequisite: Psychology 103. C-L: Women's Studies. One course. *B. Erickson*

151S-152S. Child Clinical Psychology. Theories of clinical intervention with children and families; research on prediction of adult disorders from childhood problems, evaluation of therapy and epidemiological data. Practicum with children in schools, coupled with in-class training. Prerequisites: Psychology 105 and 119. 151S: fall semester, one course. 152S: spring semester, half course. *Coie*

214S. Development of Social Interaction. Major concepts and methods pertaining to early social development, emphasizing human social behavior and a developmental psychobiological approach. One course. *Eckerman*

217S. Social Psychology. The psychology of interpersonal influence and control, the cognitive and social factors affecting the perception of persons and social action, the dynamics of interpersonal relations and relationship formation and change, the contribution of individual differences to social behavior, and applications in environmental psychology, social psychology and law, and organizational psychology. One course. *Costanzo*

219S. Physiological Foundations of Psychology. Structure and function of the nervous system as related to problems of sensory-motor processes, learning, motivation, and memory. One course. *C. Erickson and R. Erickson*

230S. Social Behavior of Animals. Developmental, ecological, and physiological aspects of territorial, sexual, parental, and aggressive behavior. One course. *C. Erickson*

234S. Personality. Selected topics of current interest concerning empirical research on personality. Strategies for the definition of research questions and the evaluation of research progress. One course. *M. Wallach*

289S. Psychology of Prevention. Concepts of prevention and mental health promotion; community psychology and social systems; epidemiology and prediction of disorder; intervention strategies; evaluation of prevention trials; ethical and cultural issues. One course. *Coie*

THE MAJOR

For the A.B. Degree

Eight courses in psychology are required for the major, which is devised to provide depth and breadth, a small group course in psychology, and familiarity with the quantitative methods involved in psychology. For breadth, the student is required to take two *Introductory and Survey* courses including: (1) either 103 (Biological Bases of Behavior) or 107 (Cognitive Psychology), and (2) either 105 (Developmental Psychology) or 108 (Personality and Social Behavior). These *Introductory and Survey* courses define four areas of concentration in psychology as listed above. For depth, the student is required to take at least two courses in one of these areas in addition to the introductory course in that area of concentration. For instruction in small groups, the student is to take at least one seminar (number 140S and above, including 200-level courses). It is advisable that this seminar be in the student's area of concentration. For quantitative methods, the student is to take one of the following: Mathematics 53, 117 or 136; Economics 138; Sociology 133; or Psychology 117 (none of which count as one of the eight required courses in psychology). A student handbook describing the curriculum in detail is available from the Director of Undergraduate Studies.

For the B.S. Degree

As for the A.B. degree, with the following additions: eligibility for Mathematics 32 or 34 plus six courses in at least two of the following departments: mathematics (100-level or above in addition to statistics requirement above) or computer sciences (100-level or above), chemistry, physics, and the biological areas: genetics, zoology, Biology 14, and Botany 103L, 180, 205, 227, 228, 237L, 268, 269, 285S, 287, 293L.

Independent Study

A program of individualized readings or an empirical research project may be carried out by arrangement with a faculty supervisor and enrollment in Psychology 191-194. A written plan of the program must be approved by the supervisor and the Director of Undergraduate Studies. Credit for 191-194 may be recorded either as pass/fail or by means of letter grades. At most only one such course may count toward the area of concentration requirement, and only two may count toward the major.

Honors

Any student majoring in psychology with an overall grade point average of 3.0 and a grade point average of 3.3 in psychology courses may be a candidate for graduation with distinction in psychology. Recommendation for this honor is made by a faculty committee which evaluates a thesis submitted by the candidate and administers an oral examination. Candidates typically enroll in independent study courses (191-194) during one or more semesters, often as early as the junior year,

although enrollment in independent study is not a precondition of candidacy. All eligible students are encouraged to carry out independent study and to secure the sponsorship of a faculty supervisor.

Public Policy Studies (PPS)

Professor Cook, *Chairman*; Associate Professor Kuniholm, *Director of Undergraduate Studies*; Professors Ascher, Barber (political science), Clotfelter, Eddy, Fleishman (law), Gillis, Horowitz (law), Hough (political science), Pearsall (engineering), and Price (political science); Associate Professors Behn, Lipscomb, McConahay, and Stack; Assistant Professors Entman, Luger, and Shetty; Instructor Durning; Professors of the Practice Geller, Green, Stubbing, and Yaggy (Medical Center); Adjunct Professor Owen; Visiting Professor Coles; Lecturers Harris and Payne

Courses in public policy are open to all students providing that any prerequisites are met.

55. Analytical Methods for Public Policy Making. Basic concepts of analytical thinking including quantitative methods for assessing the probabilities of outcomes and appraising policy alternatives. Illustrated by problems faced by busy decision makers in government, business, law, medicine, etc. One course. *Lipscomb or Shetty*

107. Comparative Environmental Policies. See C-L: Political Science 107; also C-L: Comparative Area Studies. One course. *McKean*

110. Economic Analysis for Public Policy Making: Microeconomic and Non-probabilistic Models. Application of microeconomic analysis to public policy areas, including agriculture, housing, taxation, and income redistribution. Prerequisite: Economics 52 or equivalent. (Not open to students who have taken Economics 149.) One course. *Cook, Lipscomb, or Shetty*

112. Statistics and Public Policy. Uses and limitations of statistical methods, including experimentation, for monitoring and evaluating public policies. Prerequisite: Public Policy Studies 55. (Not open to students who have taken Economics 138, Mathematics 53, or Psychology 117.) One course. *McConahay or Shetty*

114. Political Analysis for Public Policy Making. Analysis of the political and organizational processes which influence the formulation and implementation of public policy. Alternative models. C-L: Political Science 145. One course. *Ascher or Entman*

116. Policy Choice as Value Conflict. Theoretical and practical problems in decision making in relation to conflicts of value and of interest. The manifestation of norms deriving from professional ethics, ideology, law, and other sources in such policy issues as welfare, environmental management, and national defense. One course. *Payne*

118S. Ethical Dilemmas and Social Policy. The role of ideology, belief systems, and conscience in the creation of policy and in the dilemmas of individual policy makers; the social and moral context of public debate. One course. *Stack*

145. Policy, Leadership, and Change. Ethical and practical problems of leadership, including motivation, organizational morale, and strategies for large-scale change. Historical and modern case studies, literary examples, and political and psychological theory. One course. *Payne*

146S. Leadership and Judgment. Theoretical and experiential foundation for the exercise of judgment and leadership in policy making. Readings, in-class exercises, and a major leadership project within either the Duke or Durham community. Prerequisite: consent of instructor. One course. *Ott*

151S. Administration of Justice. Analysis of policy problems and conflicts involved in the operation of the criminal justice system. One course. *Cook*

152S. Administration of Justice, Summer Internship. Prerequisite: Public Policy Studies 151S. Pass/fail. Half course or one course. *Staff*

154S. Journalism and Public Policy. Policy problems and conflicts involved in applying First Amendment principles to print and electronic journalism. Topics include libel, obscenity, privacy, national security, fair trial, and antitrust. Prerequisite: consent of instructor. One course. *Entman*

155S. Journalism and Public Policy, Summer Internship. Prerequisite: Public Policy Studies 154S. Pass/fail. Half course or one course. *Staff*

157S. Health Policy. Analysis of health care problems and policies. One course. *Lipscomb*

158S. Health Policy, Summer Internship. Prerequisite: Public Policy Studies 157S. Pass/fail. Half course or one course. *Staff*

159S. State and Local Public Policy. Causes of and alternative solutions to the problems of state and local governments, with emphasis on North Carolina. C-L: Economics 159S. One course. *Luger*

161S. State and Local Public Policy, Summer Internship. Prerequisite: Public Policy Studies 159S. Pass/fail. Half course or one course. *Staff*

163S. Telecommunications Policy and Regulation. Broadcast policies, the rise of cable television, spectrum allocation and authorization, and developments in common carrier telecommunications. One course. *Geller and staff*

164S. Telecommunications Policy and Regulation, Summer Internship. Prerequisite: Public Policy Studies 163S. Pass/fail. Half course or one course. *Staff*

166. Child Policy in the United States. Social, economic, and political dimensions of policies affecting children in America. One course. *Stack*

167S. International Policy. Relationships among organizations and agencies involved in international political and economic affairs, focusing on selected problems of international policy. Prerequisites: Public Policy Studies 110 and 114. One course. *Ascher*

168S. International Policy, Summer Internship. Prerequisite: Public Policy Studies 167S. Pass/fail grading. Half course or one course. *Staff*

174. Technology Assessment and Social Choice. See C-L: Engineering 174; also C-L: Religion 174. One course. *Garg and McCollough*

175S. The Palestine Problem and United States Public Policy. Identification of Arab and Zionist perceptions, alternatives available to American decision makers, interest group pressures on United States policies, historical analysis as a means to improve public policy. C-L: Comparative Area Studies and History 159S. One course. *Kuniholm*

176S. American Communities: a Photographic Approach. A documentary approach to the study of American communities through individual photographic projects centered around a community of the student's choosing. Prerequisite: consent of instructor. C-L: Film. One course. *Harris*

178S. Visual Language and Policy Choice. History and significance of the documentary tradition, the differences between visual and verbal social observation and the ways photography can alter the analysis of social and policy problems. C-L: Film. One course. *Coles, Harris, and Payne*

180S. Writing for the Media. Workshop on writing news stories, editorials, and features for the print media. Prerequisite: consent of instructor. One course. *Green*

185. American Diplomacy from the Kennedy Administration to the Present. C-L: History 185. One course. *Kuniholm or C. Davis*

186S. Shaping the News. C-L: Political Science 112S. One course. *Barber*

190. Internship. For students working in a public agency, political campaign, or other policy-oriented group under the supervision of a faculty member. Prerequisites: prior consent of Assistant Director for Internships, Placement, and Alumni and Director of Undergraduate Studies. Pass/fail grading. One course. *Staff*

191, 192. Independent Study. Directed reading and research. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research for seniors. Two courses. *Staff*

195S. Selected Public Policy Topics. One course. *Staff*

For Seniors and Graduates

204S. Ethics in Political Life. C-L: Political Science 204S. One course. *Spragens*

215S. Public Policies to Save Lives. Economic, political, legal, and ethical issues in governmental efforts to reduce mortality through various health and safety programs and regulations. One course. *Staff*

217. Microeconomics and Public Policy Making. Consumption and production theory, welfare economics, theories of collective choice, market structures and regulation, and nonmarket decision making. One course. *Clotfelter*

218. Macroeconomic Policy. Survey of macroeconomic theory and analysis of policies designed to reduce unemployment, stimulate economic growth, and stabilize prices. Conventional monetary and fiscal instruments, employment policies, and new policies designed to combat inflation. C-L: Economics 218. One course. *Luger*

219. The Politics of the Policy Process. The formulation of public policies, substantive policies in a variety of contexts from local government to international affairs; the role of legislatures, interest groups, chief executives, and the bureaucracy in defining alternatives and in shaping policy from agenda formulation to implementation. Not open to students who have taken Public Policy Studies 114. C-L: Political Science 248. One course. *Entman*

221. Analytical Methods I: Decision Analysis for Public Policy Makers. Methods for structuring decision dilemmas and decomposing complex problems, assessing the probabilities of uncertain consequences of alternative decisions, appraising the decision maker's preferences for these consequences and for re-examining the decision. Not open to students who have taken Public Policy Studies 55. One course. *Behn, Lipscomb, or Shetty*

222. Analytical Methods II: Data Analysis for Public Policy Makers. Sampling theory, Bayesian statistics, and regression analysis. Examples from problems in health care, transportation, crime, urban affairs, and politics. Not open to students who have taken Public Policy Studies 112. One course. *McConahay*

223. Ethics and Policy Making. Normative concepts in politics, liberty, justice, and the public interest: historical and philosophical roots, relationship to one another and to American political tradition, and implications for domestic and international policy problems. C-L: Political Science 245. One course. *Kuniholm or Price*

231. Analytical Methods III: Quantitative Policy Evaluation. Problems in quantifying policy target variables such as unemployment, crime, and poverty. Experi-

mental and nonexperimental methods for evaluating the effect of public programs, including topics in experimental design, regression analysis, and simulation. Prerequisite: Public Policy Studies 222 or equivalent. One course. *McConahay*

232. Analytical Methods IV: Topics in Economic Policy. Cost benefit analysis of public programs. Public utility regulation, pollution regulation, hospital rate setting, regulation of product safety. Quantitative methods and microeconomic theory for analysis of both normative and positive aspects of economic policy. Prerequisites: Public Policy Studies 110 or 217 or Economics 149 and familiarity with regression analysis or concurrent enrollment in Public Policy Studies 231. C-L: Economics 232. One course. *Gillis*

236S, 237S. Public Management I and II: Managing Public Agencies. 236S: operations management, information and performance, personnel management, public sector marketing. 237S: organizational strategy, organizational structure and design, leadership and motivation, labor negotiations. Prerequisite for 237S: Public Policy Studies 236S. Two courses. *Behn, Durning, or Yaggy*

238S. Public Budgeting and Financial Management. Fund accounting for government; techniques of financial analysis, including break-even analysis, cost accounting, cash-flow analysis, and capital budgeting; and governmental budgeting, including the budgetary process and reforms, and the budget crunch in the public sector. One course. *Behn or Stubbing*

240S. Analyzing the News. Research seminar on political messages and effects of media. Methods and findings of content analysis, survey research, critical theory, semiology; research project integrating these approaches. C-L: Political Science 208S. One course. *Entman*

241. Reporting the American People. Critical analysis of the sources of information the media rely upon in reporting opinion and policy preferences: opinion polls, bellwethers, informed elites. Includes the design and execution of a public opinion poll on a topic of local or national interest. One course. *McConahay*

242S. Comparative Law and Policy: Ethnic Group Relations. Various approaches to the reduction of conflict in deeply divided societies, primarily in Asia and Africa, with secondary attention to Western countries. The nature of ethnic identity, the sources of group conflict, and the forms and patterns it takes. Methods of analyzing social science materials and utilizing them for the design of policies, laws, and institutions. Prerequisite: consent of instructor. C-L: Comparative Area Studies, Law 572, and Political Science 242S. One course. *Horowitz*

245S. Leadership Tutorial. Analysis of techniques, personal qualities, and organizational factors that help or hinder effective leadership. Practical experience in evaluation of leadership efforts. Prerequisite: consent of instructor. One course. *Payne*

250. Public Policy and the Arts. Democratic and aesthetic values with respect to past and present patterns of public support for the arts; for example, subsidies, tax policy, censorship, and the effect of public choices on standards of quality. One course. *Payne*

254. Transportation Planning and Policy Analysis. Prerequisite or corequisite: Civil and Environmental Engineering 116 or consent of instructor. C-L: Civil and Environmental Engineering 216. One course. *Pas*

257. United States Policy in the Middle East. From World War II to the present with a focus on current policy options. C-L: Comparative Area Studies. One course. *Kuniholm*

264S. Research Seminar: Topics in Public Policy I. Selected topics. One course. *Staff*

267S. Policy Making in International Organizations. Emphasis on international financial institutions such as the World Bank and the International Monetary Fund. C-L: Comparative Area Studies and Political Science 267S. One course. *Ascher*

268. Federal Tax Policy. Structure, incidence, and economic effects of major federal taxes. Special attention to problems of inflation, income definition, distortions, savings, and investment. C-L: Economics 268 and Law 518. One course. *Clotfelter or Schmalbeck*

270S. Humanistic Perspectives on Public Policy. Modes of inquiry into aspects of social life important to policy makers but beyond the normal reach of social science. Reading from James Agee, Robert Coles, Eudora Welty, James Baldwin, George Eliot, and others. Prerequisite: consent of instructor. One course. *Coles and Payne*

272. Resource Economics and Policy. C-L: Forestry and Environmental Studies 270. One course. *Hyde*

278. Human Service Bureaucracies. Schools, prisons, courts, welfare agencies: decision making, implementation, the impact of work practices on clients. The future of street-level bureaucracy. One course. *Stack*

283S. Congressional Policy Making. C-L: Political Science 283S. One course. *Price*

284S. Public Policy Process in Developing Countries. Policy-making patterns in less developed countries; examples from Latin America, Africa, and Asia. C-L: Comparative Area Studies and Political Science 284S. One course. *Ascher*

286S. Economic Policy Making in Developing Countries. Fiscal, monetary, and exchange rate policies in less developed countries; issues in public policy toward natural resources and state-owned enterprises. Prerequisites: Public Policy Studies 110 or Economics 149 or consent of instructor. C-L: Comparative Area Studies and Economics 286S. One course. *Gillis*

290. Glasgow Seminar in Public Policy. The large theoretical problems of public policy (e.g., justice, equality, liberty); the making and implementation of policy in specific areas (e.g., economic, urban, social); comparative analysis of Europe's communist countries and how their political systems differ from those of the United States and Britain. Prerequisites: Public Policy Studies 55, 110, 112, 114, 116, and permission of the Director of Undergraduate Studies (who may waive requirements in exceptional circumstances). (Taught in Scotland.) One course. *Staff*

COURSES CURRENTLY UNSCHEDULED

256. The Economics of Health Care

INTERNSHIP COURSES

The internship courses provide students with an opportunity to develop a basic understanding of one or more public policy areas, to apply that understanding in a job during the summer, and to return to the classroom to build on this knowledge and experience. Normally, students take a two-course sequence to receive credit for the field experience requirement of all public policy studies majors. Prior to participation in the internship program, all majors must have completed Public Policy Studies 55 and three of the four core courses (Public Policy Studies 110, 112, 114, or 116). This requirement may be waived by the Director of Undergraduate Studies for transfer students or others in unusual circumstances. Applications for enrollment in the internship program must be completed in the early fall through the Assistant

Director of Internships, Placement, and Alumni. Stipends are usually provided for all public policy majors enrolled in an internship sequence that begins with any one of the following internship courses: Public Policy Studies 152S, 155S, 158S, 161S, 164S, or 168S.

All majors are encouraged to take an advanced follow-up course in the area of their summer internship.

THE MAJOR

The policy studies major is an interdisciplinary social science program designed to provide students with the skills, analytical perspectives, and descriptive information needed by policy analysts to deal effectively with major contemporary social problems. The course of study familiarizes the student with the kind of contribution each of several disciplines (political science, economics, social psychology, applied mathematics, history, and ethics) can make to policy analysis. Opportunities are provided, both in the classroom and through field experiences, for students to integrate this material and apply it to analyzing specific public policy issues.

Students majoring in public policy participate in a variety of learning experiences including seminars, lecture and discussion classes, individual study, policy workshops, and an internship. In addition, students are urged to participate actively in programs sponsored by the Institute of Policy Sciences and Public Affairs to supplement material covered in class. As a matter of policy, students are asked to evaluate teaching and course content and are provided both formal and informal opportunities to shape the program and curriculum.

Prerequisites. Economics 2 or 52, Political Science 91, and Public Policy Studies 55.

Major Requirements. Public Policy Studies 110, 112, 114, 116, plus three additional courses, one of which must be a 200-level course. A policy-oriented field experience approved by the Director of Undergraduate Studies is required. (See Internship Courses above.)

Religion (REL)

Associate Professor Bland, *Chairman*; Associate Professor Partin, *Director of Undergraduate Studies*; Professors Bradley, Clark, Kort, Lawrence, Lincoln, Long, E. Meyers, Osborn, Poteat, and Wintermute; Associate Professors Corless, McCollough, C. Meyers, and Peters; Assistant Professor Robinson; Adjunct Professor Sasson; Lecturer Shows

Study in the Department of Religion arises from the recognition that religion, although it takes many forms, is a constitutive element of human existence individually and collectively. The curriculum pursues the study of religion in two distinguishable ways: first, through the examination of the particulars of specific religious traditions; and, second, through theoretical studies of an analytic, comparative, and constructive nature.

Introductory courses (Religion 50, 51, 52, 53, 54, 55, 56, 57, 58, and 59) are open to all undergraduates. These courses also help fulfill distributional field requirements for the religion major. Courses at the 100 level are open to all undergraduates with the exception of those specially designated. Courses at the 200 level are open to upper-classmen with the consent of the instructor.

50. The Old Testament. Historical, literary, and theological investigations. C-L: Judaic Studies. One course. C. Meyers, E. Meyers, Peters, or Wintermute

51. Introduction to Judaic Civilization. Continuity and change in the major periods of Judaism. C-L: Comparative Area Studies and Judaic Studies. One course. Bland or E. Meyers

52. The New Testament. Origins, development, and content of thought. One course. *Staff*

52D. The New Testament. Same as Religion 52 with discussion section included. One course. *Staff*

53. The Roman Catholic Tradition. A survey of the development of Roman Catholic theology and institutions from the second century to Vatican II. One course. *Clark*

54. Protestant Traditions. A survey of the historical development of Protestant theologies and denominations. One course. *Clark*

55. Biblical Literature. A study of selected Old Testament and New Testament texts, their cultural context, and the relation within them of religious meaning to literary form. One course. *Staff*

56. The Black Religious Experience in America. From the slave period to the present. C-L: Afro-American Studies 56. One course. *Lincoln*

57. Introduction to Religions of Asia. Problems and methods in the study of religion, followed by a survey of the historical development, beliefs, practices, and contemporary significance of the Islamic religion and religions of south and east Asia. C-L: Comparative Area Studies. One course. *Bradley, Corless, Lawrence, Partin, or Robinson*

58. Interpretations of Religion in Western Culture. Western religion as explained by contemporary sociologists, psychologists, anthropologists, and theologians. One course. *Bland or Poteat*

59. An Introduction to Christian Theology and Ethics. Analysis and interpretation of faith and practice. One course. *Kort, McCollough, or Osborn*

60. Ethical Issues in Twentieth-Century America. A critical examination of ethical themes, with special emphasis on public policy. For participants in the Twentieth-Century America Semester only. One course. *McCollough*

71A, 72A. Freshman-Sophomore Seminars: African and Asian Traditions. Topics and instructors to be announced. C-L: Comparative Area Studies. Two courses. *Staff*

71C, 72C. Freshman-Sophomore Seminars: Analytic, Comparative, and Constructive Studies. Topics and instructors to be announced. Two courses. *Staff*

100. Selected Studies in the Bible: Pentateuch. Analysis and interpretation of major themes and figures, with special consideration of the narratives dealing with human and Israelite origins. C-L: Judaic Studies. One course. *Staff*

101. Selected Studies in the Bible: Prophets. Analysis and interpretation of representative issues and personalities in the historical and prophetic books. C-L: Judaic Studies. One course. *Staff*

102. Selected Studies in the Bible: Writings. Analysis and interpretation of representative forms and ideas, with particular attention to wisdom literature and psalms. C-L: Judaic Studies. One course. *Staff*

105. Theology of the Old Testament. Emphasis upon history and eschatology, covenant, messianism, and wisdom. C-L: Judaic Studies. One course. *Wintermute*

108. The Life and Letters of Paul. Paul's role in the expansion of the Christian movement, the most important aspects of his thought, and his continuing influence. One course. *Staff*

109. Women in the Biblical Tradition: Image and Role. C-L: Judaic Studies and Women's Studies. One course. *C. Meyers*

- 111. The Historical Jesus.** Historical research on the life of Jesus. One course. *Staff*
- 115-116. Introduction to Biblical Hebrew.** (Divinity School courses open to undergraduates with permission of the instructor.) Elements of phonology, morphology, and syntax. Exercises in reading and writing Hebrew. 116: study of the weak verb; exegetical treatment of the Book of Jonah. C-L: Judaic Studies. Two courses. *Bailey*
- 123. Issues in Early Christian History.** Theological, ecclesiastical, moral, and social issues in second- to fifth-century Christianity. Prerequisite: Religion 52 or 53 or 54 or 125 or consent of instructor. One course. *Clark*
- 124. Christianity in the United States.** Leaders and issues in representative movements and institutions. One course. *Staff*
- 125. Women and Sexuality in the Christian Tradition.** A historical survey of Christian attitudes and practices from New Testament times to the present. C-L: Women's Studies. One course. *Clark*
- 127. Early Christian Culture: Evidence of Art and Literature.** See C-L: Art 127. One course. *Epstein and Gregg*
- 128. The Background of Contemporary Christian Thought: 1918-1960.** Theology of Karl Barth, Rudolf Bultmann, Paul Tillich, Karl Rahner, Reinhold Niebuhr, and others. One course. *Osborn*
- 129. Contemporary Christian Faith and Politics.** One course. *Osborn*
- 131D. Principles of Archaeological Investigation.** Supervised field work, visits to other excavations, introduction to ceramic chronology, numismatics, and other related disciplines. Excavation of a late Roman village in Galilee. Offered in Israel, only in the summer. C-L: Judaic Studies. One course. *C. Meyers or E. Meyers*
- 132D. Palestine in Late Antiquity.** The history, literature, and archaeology of Roman Palestine with particular emphasis on Galilee in rabbinic and early Christian times. C-L: Comparative Area Studies and Judaic Studies. One course. *E. Meyers*
- 133. The Foundations of Post-Biblical Judaism.** History, religion, and literature of Pharasaic and sectarian Judaism from the time of Ezra to Rabbi Judah. C-L: Comparative Area Studies and Judaic Studies. One course. *E. Meyers*
- 134. Jewish Mysticism.** The main historical stages, personalities, texts, and doctrines from rabbinic to modern times. C-L: Comparative Area Studies, Judaic Studies, and Medieval and Renaissance Studies. One course. *Bland*
- 135. Jewish Religious Thought.** Doctrines, dialectics, and religious attitudes of pre-Enlightenment theologians. C-L: Comparative Area Studies, Judaic Studies, and Medieval and Renaissance Studies. One course. *Bland*
- 136. Contemporary Jewish Thought.** Modern Jewish thought from Mendelssohn to the present, with particular reference to American thinkers. C-L: Comparative Area Studies and Judaic Studies. One course. *Bland or E. Meyers*
- 138. Political Leadership in the Black Church.** Turner, Powell, King, Malcolm X, and others. C-L: Afro-American Studies 138. One course. *Lincoln*
- 140. Religions of India.** Major religious traditions of the subcontinent: Hinduism, Buddhism, Jainism, and Islam. C-L: Comparative Area Studies. One course. *Bradley or Lawrence*
- 141. Religions of China and Japan.** Traditional religion in China and Japan and its interaction with Sino-Japanese Buddhism. C-L: Comparative Area Studies. One course. *Corless*

142. Comparative Mythology. Nature and functions of religious myth in Judaism, Christianity, Islam, Hinduism, and Buddhism. C-L: Comparative Area Studies. One course. *Partin*

143. Mysticism. The mystical element of religion: Hinduism, Buddhism, Christianity, and Islam. C-L: Comparative Area Studies. One course. *Bradley*

144. Black Cults and Sects in America. Cult-sect phenomena. C-L: Afro-American Studies 144. One course. *Lincoln*

145. Social Issues in Contemporary Hinduism. Emphasis on the caste system and reactions to it; topics include untouchability, religious roles of women, and institutional responses to famines and epidemics. C-L: Comparative Area Studies. One course. *Robinson*

148. Modern American Religious Cults. Children of God, Unification Church, Scientology, Feraferia, Transcendental Meditation, Krishna Consciousness, Bahai, and others. One course. *Partin*

149. Buddha and Buddhism. A systematic introduction to the origins and spread of Buddhist thought and practice. C-L: Comparative Area Studies. One course. *Corless*

151. Ethical Issues in Social Change and Public Policy. American moral tradition and factors in social change in the normative analysis of public policy, with a consideration of specific ethical issues. One course. *McCollough*

152. Islamic Mysticism. Sufism as an ascetical protest movement that affected the worldwide growth of Islam. C-L: Comparative Area Studies. One course. *Lawrence*

155. Ethical Issues in the Life Cycle. Human development viewed in religious, ethical, and psychological perspectives. One course. *McCollough*

156. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy. C-L: Anthropology 109, Comparative Area Studies, History 109, Interdisciplinary Course 109, Political Science 160, and Sociology 175. One course. *Staff*

157. Bioethics in Comparative Contexts. Ethical approaches to health and illness from moral, religious, and philosophical perspectives in relation to economic, social, and political factors. One course. *McCollough*

158. Psychology and Religion. Contributions of major psychological theories to an understanding of religion, especially Christianity. One course. *Shows*

159. Ethical Issues in Health Care. A theological and comparative study of selected ethical issues in health policy: the profession of medicine, institutional organization and services, and medical practice. One course. *McCollough*

160, 161. Introduction to the Civilizations of Southern Asia. See C-L: Interdisciplinary Courses 101, 102; also C-L: Anthropology 101, 102, Comparative Area Studies, and History 193, 194. Two courses. *Lawrence and staff*

162, 163. Introduction to Islamic Civilization. See C-L: Interdisciplinary Courses 162, 163; also C-L: Anthropology 147, 148, Comparative Area Studies, History 101G, 102G, and, for 162, Medieval and Renaissance Studies. Two courses. *Lawrence and staff*

164. History and Religions of North Africa. An introduction to the cultural patterns, social forces, and historical developments that have shaped North Africa and its major religious traditions. C-L: Comparative Area Studies, History 187, and Interdisciplinary Course 164. One course. *Lawrence*

170. Problems of Religious Thought. Analysis of uses of *know, true, mind, body, time, person, love, meaning*, in modern Western culture as introduction to religious reflection. One course. *Poteat*

172. Religion and Tragedy. Influence of the Judaic-Christian religious tradition on the development of the tragic view of life. One course. *Poteat*

174. Technology Assessment and Social Choice. See C-L: Engineering 174; also C-L: Public Policy Studies 174. One course. *Garg and McCollough*

188. Recent Literature and Its Religious Implications. Religious elements in recent literature. One course. *Kort*

191, 192. Independent Study. For freshmen and sophomores with departmental approval. Two courses. *Staff*

193, 194. Independent Study. For juniors and seniors with departmental approval. Two courses. *Staff*

195A, 196A. Junior-Senior Seminars: African and Asian Traditions. Topics and instructors to be announced. C-L: Comparative Area Studies. Two courses. *Staff*

195B, 196B. Junior-Senior Seminars: Jewish and Christian Traditions. Topics and instructors to be announced. C-L: Judaic Studies. Two courses. *Staff*

195C, 196C. Junior-Senior Seminars: Analytic, Comparative, and Constructive Studies. Topics and instructors to be announced. C-L: Comparative Area Studies. Two courses. *Staff*

197-198. Honors Research. Consent of the Director of Undergraduate Studies required. Two courses. *Staff*

For Seniors and Graduates

207, 208. Intermediate Biblical Hebrew. Grammar with reading and exegesis of Old Testament prose and poetry. C-L: Old Testament 207, 208 in the Divinity School; and Judaic Studies. Prerequisite: at least one year of Hebrew or consent of instructor. Two courses. *Staff*

212. Policy Making and Theological Ethics. Relation of knowledge, power, and values in policy making; models of decision making in the policy sciences and their ethical implications. One course. *McCollough*

217. Islam in India. History and thought of major Indian Muslims from Biruni to Wali-Ullah, with special attention to the role of Sufism. An introduction to selected Muslim scholars and saints who contributed to the interaction between Islam and Hinduism in Northern India during the second millenium A.D. C-L: Comparative Area Studies. One course. *Lawrence*

218. Religion in Japan. A survey of religion in Japan, with specific emphasis on indigenization and attempts at synthesis. An approach to the meaning of the words *religious* and *secular* in the Japanese situation. C-L: Comparative Area Studies. One course. *Corless*

220. Rabbinic Hebrew. Interpretive study of late Hebrew, with readings from the Mishnah and Jewish liturgy. C-L: Judaic Studies. One course. *E. Meyers or staff*

221. Readings in Hebrew Biblical Commentaries. Selected Hebrew texts in Midrash Aggadah and other Hebrew commentaries reflecting major trends of classical Jewish exegesis. C-L: Judaic Studies. One course. *Bland*

226B. Exegesis of the Greek New Testament (Romans). Prerequisite: consent of instructor. One course. *Staff*

226F. Exegesis of the Greek New Testament (I and II Corinthians). Prerequisite: consent of instructor. One course. *Staff*

228. Twentieth-Century Continental Theology. An investigation of leading theologians and theological trends. One course. *Osborn*

230S. The Meaning of Religious Language. An analysis of the credentials of some typical claims of theism in the light of theories of meaning in recent thought. Prerequisite: consent of instructor. C-L: Philosophy 230S. One course. *Poteat*

231S. Seminar in Religion and Contemporary Thought. Analytical reading and discussion of such critical cultural analysis as is found in the works of Polanyi, Arendt, Trilling, and others, with appraisal of the relevance of theological inquiry. One course. *Poteat*

232S. Religion and Literature. Theories concerning the relation of religion to literary forms, particularly narrative. One course. *Kort*

233. Modern Narratives and Religious Meanings. A study of kinds of religious meaning or significance in representative American, British, and continental fiction of the first half of the twentieth century. One course. *Kort*

234. Early Christian Asceticism. The development of asceticism and monasticism in the first six centuries of Christianity. C-L: Women's Studies. One course. *Clark*

235. Heresy: Theological and Social Dimensions of Early Christian Dissent. One course. *Clark*

238. Jewish Responses to Christianity. Apologetic and polemical themes in rabbinic, medieval, and contemporary writings. C-L: Judaic Studies. One course. *Bland*

239. Introduction to Middle Egyptian I. Grammar and readings in hieroglyphic texts relating to the Old Testament. One course. *Wintermute*

240. Introduction to Middle Egyptian II. Readings in Middle Egyptian and introduction to New Egyptian Grammar. Prerequisite: Religion 239. One course. *Wintermute*

243. Archaeology of Palestine in Biblical Times. Investigation of selected material remains from the Bronze Age to the Persian period. Trends in biblical studies, with particular attention to methodological considerations and current developments. C-L: Comparative Area Studies. One course. *C. Meyers*

244. The Archaeology of Palestine in Hellenistic-Roman Times. The study of material and epigraphic remains as they relate to Judaism in Hellenistic-Roman times, with special emphasis on Jewish Art. C-L: Comparative Area Studies and Judaic Studies. One course. *C. Meyers or E. Meyers*

248. Theology of Karl Barth. A historical and critical study of Barth's theology. One course. *Osborn*

258. Coptic. Introduction to the Sahidic dialect with selected readings from Christian and Gnostic texts. Prerequisite: one year of Greek or consent of instructor. One course. *Wintermute*

264. The Sociology of the Black Church. An effort to identify, define, describe, and interpret the black church. One course. *Lincoln*

265. Religions of the West Africa Diaspora. Religious development of Africans displaced to the Western Hemisphere by slavery. C-L: Afro-American Studies and Comparative Area Studies. One course. *Lincoln*

280. The History of Religions. A study of the methodology of the history of religions, the nature of religious experience, and specific categories of religious phenomena. One course. *Partin*

281. Phenomenology and Religion. The writing of Scheler, E. Strauss, Merleau-Ponty, Ricoeur, Binswanger, or others; their bearing upon religious knowledge and practice. Prerequisite: consent of instructor. One course. *Poteat*

282. Myth and Ritual. Myths, rites, and symbols as modes of religious expression. Interpretation of symbolic configurations of kingship, initiation, sacrifice, and pilgrimage in diverse cultural contexts. One course. *Robinson and staff*

283. Islam and Modernism. Cultural, religious, and ideological forces which shape Muslim responses to modernism. C-L: Comparative Area Studies. One course. *Lawrence*

284. The Religion and History of Islam. Origins and development of the Islamic community and tradition, with particular attention to the religious element. C-L: Comparative Area Studies. One course. *Partin*

285. Introduction to the History of Religions. The history, symbols, rites, and structures of the manifestations of the sacred in the major religious traditions of the world. One course. *Staff*

287. The Scriptures of Asia. Translations of basic texts from the religious traditions of India, China, and Japan. C-L: Comparative Area Studies. One course. *Bradley*

288. Buddhist Thought and Practice. A historical introduction to Buddhist thought and practice, with special attention to their interrelationship in the living religion. C-L: Comparative Area Studies. One course. *Corless*

COURSES CURRENTLY UNSCHEDULED

71B, 72B. Freshman-Sophomore Seminars: Jewish and Christian Traditions

99. Perspectives in Archaeology

106. Jesus and the Synoptic Gospels

107. Theology of the New Testament

110. Archaeology and Art of the Biblical World

120. History of the Christian Church

147. Muhammad and the Qur'ān

166. The Professions and Society

RELIGION COURSES BY FIELDS

Introductory Courses. Religion 50, 51, 52, 52D, 53, 54, 55, 56, 57, 58, 59, 60.

African and Asian Religions. Religion 57, 71A, 72A, 140, 141, 145, 149, 152, 160, 161, 162, 163, 195A, 196A, 217, 255, 265, 283, 284, 285, 287.

Jewish and Christian Traditions. Religion 50, 51, 52, 52D, 55, 71B, 72B, 100, 101, 102, 105, 106, 107, 108, 109, 111, 115-116, 123, 124, 125, 127, 128, 129, 131D, 132D, 134, 135, 139, 195B, 196B, 207, 208, 220, 221, 226B, 228, 239, 243, 248, 258.

Analytic, Comparative, and Constructive Studies. Religion 56, 58, 59, 60, 71C, 72C, 99, 138, 142, 143, 144, 148, 151, 155, 156, 158, 166, 170, 172, 174, 188, 195C, 196C, 212, 233, 238, 264, 280.

THE MAJOR

Major Requirements. Eight courses, which must include at least two introductory courses (numbered 50 through 60). The distribution of courses must also include at least one each from the categories African and Asian traditions; Jewish and Christian traditions; and analytic, comparative, and constructive studies. One of the eight courses must be a junior-senior seminar or a 200-level course.

The student, in consultation with an assigned adviser and with the adviser's approval, should elect four of the eight courses in such a way that they constitute a thematic or methodological concentration on a particular aspect of religion.

To prepare for graduate or professional study of religion, the department recommends that students complete at least four courses in college level study, or the equivalent, of a foreign language. Master of Arts and Doctor of Philosophy programs often require examination in one or two foreign languages. Students planning to attend a theological seminary should note that knowledge of biblical languages, as well as Latin, frequently is presupposed or required. Those planning to pursue studies of Asian religions should begin appropriate language study as part of their undergraduate preparation.

Honors. The department offers work leading to graduation with distinction. For further information consult the Director of Undergraduate Studies and the section on honors in this bulletin.

Romance Languages (RL)

Professor Stewart, *Chairman*; Associate Professor Hull, *Director of Undergraduate Studies*; Professors Fein, Garci-Gómez, Jameson, Osuna, Tetel, and Wardropper; Associate Professors Bryan, Caserta, Orr, Pérez, Ripley, and Thomas; Assistant Professors Bell, Ross, and Wheeler; Professors Emeriti Cordle, N. Dow, Fowlie, Jordan, and Predmore; Associate Professor Emeritus Vincent; Assistant Professors Emeriti M. T. Dow and Miller; Visiting Professor Dorfman

French and Spanish 76, or an Achievement or Placement test score of 600 in French and 630 in Spanish, are the prerequisites for all courses over 100 not taught in English. Students who by reason of foreign residence have had special opportunities in French or Spanish must be classified by the Director of Undergraduate Studies.

The intensive language courses 181 and 182 provide an introduction to the language. They are recommended for students who wish to acquire proficiency in a second foreign language before entering graduate school.

In literature, one credit is granted for a score of 3 or 4 and two credits for a score of 5 (French or Spanish 70, 71) on the examination of the advanced placement program. In language, one advanced placement credit (French or Spanish 76) is granted for scores of 4 and 5.

FRENCH (FR)

1-2. Elementary French. Understanding, speaking, reading, and writing French. Language laboratory for recording-listening practice. Two courses. *Staff*

12. Review of Elementary French. Intensive review of first-year French. Satisfies the foreign language requirement; open only to students with a placement or achievement score of 380-440. One course. *Staff*

63. Intermediate French. Grammar review, reading, and oral practice, including laboratory experience. Prerequisite: French 2, 12, or Achievement or Placement Test score of 450-540. One course. *Staff*

70, 71. These numbers represent one or two course credits for advanced placement in literature.

76. Advanced Intermediate French. Oral practice, reading, composition. Prerequisite: French 63 or Achievement or Placement Test score of 550-590. One course. *Staff*

101, 102. Introduction to French Literature. An introduction to the major writers of the French literary tradition. Selections and complete works of poetry, fiction, theater, and essay. 101: Middle Ages through the eighteenth century. 102: nineteenth and

twentieth centuries. Lectures and discussions; short essays and tests. Conducted in French. Two courses. *Staff*

103S, 104S. Discussions of Readings. Selected topics. Open only to freshmen and sophomores. Two courses. *Staff*

107S. Contemporary Ideas. Readings and discussion of French works which have provoked political or intellectual thought in recent years. For freshmen and sophomores only. C-L: Comparative Area Studies. One course. *Staff*

110. Advanced Grammar and Composition. A systematic study of the structure of formal French. Practice in writing. One course. *Bryan or Hull*

111S. French for Current Affairs. Problems and controversies in today's France. Readings, discussions, and exposés. One course. *Bryan and staff*

112S. Special Topics in Advanced Language. Intensive work on the vocabulary and usage of a specialized field. Readings, discussions, and exposés. One course. *Staff*

113S. French for Business and Law. An introduction to French commercial and legal practices and vocabulary. One course. *Bryan*

114. Language and Civilization of Quebec. Offered only as part of summer program in Montreal. C-L: Canadian Studies and Comparative Area Studies. One course. *Staff*

117. French Phonetics. Sounds, rhythm, intonation. Individual practice in language laboratory. Readings in phonetic theory. One course. *Hull*

118. Advanced Translation and Stylistics. Differences between French and English patterns of expression. Levels of usage. Practice in translation. Prerequisite: French 110 or equivalent or consent of instructor. One course. *Hull or Thomas*

120. Language, Computers, and Formal Intelligence. Basic principles of functioning of any type of language considered as a symbolic coding. Symbolic structures and operations common to natural and programming languages, focusing on English, Algol 68, BASIC, and Pascal. Prerequisite: Anthropology 107 or English 111 or Computer Science 51. One course. *Thomas*

131S. French in the New World. French and Creole in Canada, New England, Louisiana, and the Caribbean. Origins, history, linguistic characteristics, current political and social issues. C-L: Canadian Studies, Comparative Area Studies, and Linguistics. One course. *Hull*

132. Literature and History of Quebec. Offered only as part of summer program in Montreal. C-L: Canadian Studies and Comparative Area Studies. One course. *Staff*

136S. Life in Eighteenth-Century France. A course based on period documents—books, memoirs, newspapers, scandal sheets—designed to give a picture of life in a large French city before the modern era. C-L: Comparative Area Studies. One course. *Stewart*

137. Aspects of Contemporary French Culture. Offered only as part of summer program in Paris. One course. *Staff*

139. French Civilization. The institutions and culture of France from the Middle Ages to the present. Readings and discussions in French. C-L: Comparative Area Studies. One course. *Tetel*

141S, 142S. French Literature. Topics to be announced. Open to juniors and seniors. Two courses. *Staff*

143. Aspects of French Literature. Concentration on single authors, genres, movements, or themes. Topics to be announced. Offered only as part of summer program in Paris. One course. *Staff*

145S. Topics in Renaissance Literature and Culture. Topics may include: women writers, love and self-knowledge, carnival and the grotesque, in search of Rome, text as political and religious pamphlet. C-L: Medieval and Renaissance Studies. One course. *Tetel*

146S. Montaigne and Self-Portraiture. A reading of some *essais* in the light of the self-portrait in Renaissance art. C-L: Medieval and Renaissance Studies. One course. *Tetel*

147. The Roots of Modernity in Seventeenth-Century Literature. Analysis of form and thought in selected works of Descartes, La Fontaine, Madame de Lafayette, Pascal, La Rochefoucauld, and La Bruyère. Emphasis on the innovations and lasting influence of each author. One course. *Staff*

148. French Drama of the Seventeenth Century. The plays of Corneille, Racine, and Molière are read in conjunction with several twentieth-century works to explore dramatic conventions and the difference between tragedy and comedy. C-L: Medieval and Renaissance Studies. One course. *Staff*

151. French Comedy. The theatrical tradition of comedy and its evolution, with emphasis on Molière, Marivaux, and Beaumarchais, and other readings from *Pathelin* to Ionesco. C-L: Drama 122. One course. *Stewart*

152. The Early French Novel. Origins and evolution of the novel in the seventeenth and eighteenth centuries: Madame de Lafayette, Marivaux, Prévost, Rousseau, Diderot, Laclos, Sade. One course. *Stewart*

153. The French Enlightenment. Religion, politics, and philosophic and literary ideas of eighteenth-century France: Montesquieu, Voltaire, Rousseau, and others. One course. *Stewart*

155. Romanticism in French Literature. Romantic theory and practice; including Constant, Chateaubriand, Lamartine, Hugo, Musset, Vigny, and Nerval. One course. *Orr*

156. The Age of the Novel. Flaubert, Balzac, and Stendhal. One course. *Bell or Orr*

158. Toward Modernism in French Poetry. An introduction to modern trends in the nineteenth century; emergence from traditional romanticism; art for art's sake and Parnassians (Gautier, Leconte de Lisle); the transition from decadence to symbolism (Baudelaire, Verlaine, Rimbaud, and Mallarmé). One course. *Thomas*

159. Feminist Fiction. Works by women in the modern period, including George Sand, Colette, Simone de Beauvoir, and others. C-L: Women's Studies. One course. *Orr*

162. French Drama of the Twentieth Century. A survey of literature for the stage from 1890 to the present. One play each of Claudel, Maeterlinck, Jarry, Giraudoux, Cocteau, Ghelderode, Anouilh, Montherlant, Sartre, Camus, Genet, Ionesco, Beckett, Pinget, Vian, and Arrabal. C-L: Drama 123. One course. *Staff*

163. French Poetry of the Twentieth Century. The symbolist heritage and surrealism: Mallarmé, Apollinaire, Breton, Eluard, Tzara, and others. One course. *Thomas*

166, 167. Contemporary French Life and Thought. Major writers of the twentieth century and their historical and cultural circumstances. 166: Claudel, Gide, Valéry,

Proust, Apollinaire, Mauriac, Alain-Fournier, Cocteau. 167: Giono, Breton, Aragon, Malraux, Sartre, Beckett, Camus, Robbe-Grillet, Sarraute. C-L: Comparative Area Studies. Two courses. *Staff*

169. The Contemporary Novel in French Canada. Major trends in the novel since World War II: social revolt, proletarianism, political and religious liberation, and rejection of the past. C-L: Canadian Studies and Comparative Area Studies. One course. *Staff*

181. Intensive French. An introduction to the language. Prerequisites: four semesters of another foreign language or consent of instructor. One course. *Staff*

182. Intensive French. Readings in modern literature: analysis and discussion. Prerequisite: French 181 or consent of instructor. One course. *Staff*

191, 192. Independent Study. Directed reading and research. Open only to qualified juniors by consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research. Open only to qualified seniors by consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

210. The Structure of French. Modern French phonology, morphology, and syntax. Readings in current linguistic theory. C-L: Linguistics. One course. *Hull*

211. History of the French Language. The evolution of French from Latin to its present form; internal developments and external influences. C-L: Linguistics and Medieval and Renaissance Studies. One course. *Hull*

223. Semiotics for Literature. Theoretical writings in general semiotics by Frege, Peirce, Saussure, Mukarovsky, and Morris and their applications for textual analysis of French literary works by representative contemporary critics such as Eco, Riffaterre, Corti, and Greimas. Taught in English. One course. *Thomas*

248. French Literature of the Seventeenth Century. The baroque and the classical: form and meaning in the plays of Corneille, Racine, and Molière. Readings in baroque and précieux poetry. C-L: Medieval and Renaissance Studies. One course. *Staff*

251, 252. Literature of the Eighteenth Century. Problems of literary history, critical reading, and interpretation, focused on varying topics. Two courses. *Stewart*

255. French Preromantic and Romantic Poetry. Chénier, Vigny, Lamartine, Hugo, and Nerval. One course. *Orr*

256. Modern Literature and History. The problems of history, society, and politics in literature, through the writings of Rousseau, Tocqueville, Michelet, Flaubert, Hugo, Merleau-Ponty, Foucault, and others. C-L: Comparative Area Studies. One course. *Orr*

257. Problems of Identity in the Nineteenth-Century Novel. Romanticism and romantic realism, studied especially in the works of Chateaubriand, Stendhal, Constant, de Staël, and Sand. One course. *Bell, Jameson, or Orr*

258. The Narrative of Social Crisis. Realism and naturalism, with special emphasis on Balzac, Flaubert, and Zola. One course. *Bell, Jameson, or Orr*

261. French Symbolism. Poetry and theories of Baudelaire, Mallarmé, and Rimbaud. Decadence: Lautréamont and Laforgue. One course. *Orr or Thomas*

263. Contemporary French Theater. Dramatic theory; the art of the leading directors; the major texts of Claudel, Anouilh, Sartre, Beckett, Ionesco, Genet, Adamov, Arrabal, and Rezvani. One course. *Orr or Thomas*

264. Contemporary French Poetry. The language of poetry. A chronological and theoretical approach to the major poets and movements since 1950. Selections from Bonnefoy, Char, Daive, Deguy, Dupin, Jabès, Jaccottet, Faye, Guillevic, Michaux, Meschonnic, Noël, Oulipo, Ponge, Stefan, Tortel, and others. One course. *Orr or Thomas*

265. French Literature of the Early Twentieth Century. Emphasis on Gide, Mauriac, Proust, and Colette. One course. *Staff*

266. French Literature of the Mid-Twentieth Century. Emphasis on Malraux, Sartre, Camus, and the *nouveau roman*. One course. *Jameson*

290S. Studies in a Contemporary Figure. A writer, philosopher, critic, or artist. One course. *Staff*

Courses Currently Unscheduled

122. The French Film

170. Film and the French Novel

ITALIAN (IT)

1-2. Elementary Italian. Understanding, speaking, reading, and writing Italian. Language laboratory available for recording-listening practice. Two courses. *Caserta and staff*

63. Intermediate Italian. Grammar review; reading; oral practice, including laboratory experience. One course. *Caserta and staff*

111. Spoken Italian. Intensive instruction in Italian using selected topics and readings to build vocabulary and to provide practice in structural patterns. One course. *Caserta*

137. The Italian Cinema. Italian historical and social scene from 1945 to 1978 from cinema viewings and discussions. Neorealism, realism, and director's perspectives. C-L: Film. One course. *Staff*

139. Modern Italy. Political, social, economic, and cultural problems in Italian history from 1861 to the present. One course. *Caserta*

181. Intensive Italian. An introduction to the language. Prerequisites: four semesters of another foreign language or consent of instructor. One course. *Caserta*

182. Intensive Italian. Readings in modern literature: analysis and discussion. Prerequisite: Italian 181 or consent of instructor. One course. *Caserta*

183, 184. Readings in Italian Literature. Historical and critical analysis. 183: Dante, Petrarch, Boccaccio, and the humanists. 184: Foscolo, Manzoni, Leopardi, and Verga. Conducted in Italian. C-L, 183: Medieval and Renaissance Studies. Two courses. *Caserta*

191, 192. Independent Study. Directed reading and research. Open only to qualified juniors by consent of instructor and of Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research. Open only to qualified seniors by consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

283. Italian Novel of the Novecento. Representative novelists from Svevo to the most recent writers. One course. *Caserta*

284, 285. Dante. 284: *La Vita Nuova* and a close reading of the *Inferno*. 285: The *Purgatorio* and the *Paradiso* in the light of Dante's cultural world. Special attention will be given to the poetic significance of the *Commedia*. Conducted in English. Reading in Italian or English. Prerequisite for 285: Italian 284 or equivalent. C-L: Medieval and Renaissance Studies. Two courses. *Caserta*

PORTUGUESE (PTG)

181. Brazilian Portuguese. An intensive introduction to the language. Prerequisites: four semesters of another foreign language or consent of instructor. C-L: Comparative Area Studies. One course. *Wheeler*

182. Topics in Portuguese and Brazilian Literature and Culture. Grammar review, readings, and discussion. Focus on twentieth-century Luso-African, Portuguese, and Brazilian writers. Prerequisite: Portuguese 181 or consent of instructor. C-L: Comparative Area Studies. One course. *Wheeler*

191, 192, 193, 194. Independent Study. Four courses. *Wheeler*

Courses Currently Unscheduled

185, 186. Conversation

SPANISH (SP)

1-2. Elementary Spanish. Understanding, speaking, reading, and writing Spanish. Language laboratory available for recording-listening practice. Two courses. *Staff*

12. Review of Elementary Spanish. Intensive review of first-year Spanish. Satisfies the foreign language requirement; open only to students with a placement or achievement score of 430-490. One course. *Staff*

14. Intensive Elementary Spanish. Offered only in the Duke-in-Spain program. Two courses. *Staff*

63. Intermediate Spanish. Grammar review, reading, and oral practice, including laboratory experience. Prerequisite: Spanish 2, 12, or Achievement or Placement Test score of 500-570. One course. *Staff*

70, 71. These numbers represent one or two course credits for advanced placement in literature.

76. Advanced Intermediate Spanish. Oral practice, reading, composition. Prerequisite: Spanish 63 or Achievement or Placement Test score of 580-620. One course. *Staff*

101, 102. Introduction to Literature. Major writers of the Spanish literary tradition. Poetry, fiction, theater, and essay. 101: Middle Ages through the seventeenth century. 102: eighteenth, nineteenth, and twentieth centuries. Two courses. 101: *Garcí-Gómez and staff*; 102: *Osuna and staff*

103S, 104S. Discussion of Readings. Selected topics. Open only to freshmen and sophomores. Two courses. *Staff*

105, 106. Introduction to Spanish-American Literature. A survey of major writers and movements from the period of discovery to the present day. 105: the periods of conquest, colonial rule, and early independence. Includes works by native Indian, *mestizo*, and women writers. 106: from *Modernismo* to the contemporary period. C-L: Comparative Area Studies. Two courses. 105: *Ross*; 106: *Fein*

107S. Spanish-American Short Fiction. Novelettes and short stories of the twentieth century: Borges, Cortázar, Denevi, Donoso, García Márquez, and others. C-L: Comparative Area Studies. One course. *Fein*

- 108S. Spanish Traditional Poetry.** The Spanish *Romancero*; ballads and other forms of popular poetry. C-L: Comparative Area Studies and Medieval and Renaissance Studies. One course. *Garci-Gómez*
- 109S. Contemporary Hispanic Ideas.** Readings in twentieth-century Spanish and Spanish-American nonfiction. Open only to freshmen and sophomores. One course. *Pérez*
- 110. Spoken Spanish.** Study of colloquial Spanish, practice in pronunciation and conversation, emphasis on oral communication. Prerequisite: Spanish 76 or consent of instructor. One course. *Garci-Gómez and staff*
- 111. Written Spanish.** Grammatical problems in composition and translations; introduction to the techniques of literary and professional styles. One course. *Pérez and staff*
- 114S. Spanish Language: Peninsular or American.** Topics to be announced. One course. *Staff*
- 117S. Advanced Grammar.** A systematic study of modern Spanish morphology and syntax. Offered only in the Duke-in-Spain program. One course. *Staff*
- 118S. Translation from and into Spanish.** Practice in translation, study of professional and model translations, with emphasis on improving skills in the use of both Spanish and English by means of close comparisons of the two languages. One course. *Wardropper and staff*
- 119S. Structure of Spanish.** A systematic study of modern Spanish morphology and syntax with some readings in current linguistic theory. Prerequisite: Spanish 110 or 111. C-L: Linguistics. One course. *Wheeler*
- 121. Latin-American Literature.** Fictional and poetic works of the last thirty years that have made an impact on world literature. Taught in English. One course. *Fein*
- 131. Topics of Hispanic Civilization.** A humanistic study of Spain or Spanish America through history, culture, people, and institutions. C-L: Comparative Area Studies. One course. *Staff*
- 133S. Spanish-American Civilization.** An interdisciplinary approach including architecture, cultural anthropology, history of ideas, and music. C-L: Comparative Area Studies. One course. *Fein*
- 137. Aspects of Contemporary Spanish Culture.** Offered only as part of the summer program in Spain. One course. *Garci-Gómez*
- 141S, 142S. Spanish Literature.** Topics to be announced. Open to juniors and seniors. Two courses. *Staff*
- 144S. Spanish-American Literature of Identity.** Exploration of the concepts of *lo criollo* or *lo americano*, essentially through the analysis of texts by Arriví, Carpentier, Neruda, Paz, and others. One course. *Pérez*
- 145S. Literature of the Hispanic Minorities of the United States.** Representative Spanish-language works by Puerto Rican, Cuban-American and Chicano writers. One course. *Pérez*
- 146. The Spanish-American Novel.** Masterworks of the twentieth century. C-L: Comparative Area Studies. One course. *Fein*
- 151. Spanish Literature of the Renaissance and the Baroque.** Selected works of the sixteenth and seventeenth centuries with attention to their reflection of social,

religious, and political ideas. C-L: Medieval and Renaissance Studies. One course. *Ross or Wardropper*

153. Golden Age Literature: Cervantes. Emphasis on the *Quijote*. C-L: Medieval and Renaissance Studies. One course. *Staff*

163. The Generation of 1898. Selected works by Unamuno, Baroja, Azorín, Valle-Inclán, and Machado. One course. *Osuna*

165S. Major Spanish Authors. Textual studies; methods of literary interpretation and criticism. One course. *Wardropper*

166. Nineteenth-Century Prose Fiction. Major forms in Spain and Spanish America: Clarín, Blest-Gana, Cambaceres, Galdós, and others. C-L: Comparative Area Studies. One course. *Pérez*

171. Literature of Contemporary Spain. A sociological approach to the novel, theater, and poetry: Goytisolo, Buero Vallejo, Sastre, Arrabal, Celaya, and Otero. C-L: Comparative Area Studies. One course. *Osuna*

181. Intensive Spanish. An introduction to the language. Modern readings. Prerequisites: four semesters of another foreign language or consent of instructor. One course. *Staff*

182. Readings in Spanish-American Literature. Prerequisite: Spanish 181 or consent of instructor. One course. *Staff*

191, 192. Independent Study. Directed reading and research. Open only to qualified juniors by consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research. Open only to qualified seniors by consent of instructor and Director of Undergraduate Studies. Two courses. *Staff*

210. History of the Spanish Language. Formation and development. Internal forces and external contributions. C-L: Comparative Area Studies, Linguistics, and Medieval and Renaissance Studies. One course. *Garci-Gómez*

241. Colonial Prose of Spanish America. Narrative forms written in Spanish-America during the sixteenth, seventeenth, and eighteenth centuries. One course. *Ross*

245. Modern Spanish-American Poetry. From modernismo to the present. C-L: Comparative Area Studies. One course. *Fein*

246. Modern Spanish-American Fiction. Twentieth-century novels and short stories by Borges, Carpentier, Cortázar, Gallegos, García Márquez, Quiroga, and others. C-L: Comparative Area Studies. One course. *Pérez*

248. Studies in Spanish-American Literature. Concentration on single authors, genres, movements, or themes. One course. *Staff*

251. The Origins of Spanish Prose Fiction. Selected examples of the romance and the novel: *Amadís de Gaula*, Diego de San Pedro's *La Cárcel de amor*, the *Abencerraje*, the *Lazarillo*, Montemayor's *Diana*. C-L: Medieval and Renaissance Studies. One course. *Wardropper*

253. Cervantes. The life and thought of Cervantes with special emphasis on his *Quijote*. C-L: Medieval and Renaissance Studies. One course. *Wardropper*

254. Drama of the Golden Age. The chief Spanish dramatists of the seventeenth century with readings of representative plays of this period. C-L: Medieval and Renaissance Studies. One course. *Wardropper*

258S. Spanish Lyric Poetry before 1700. Selected poems of the Middle Ages, Renaissance, and baroque. Special emphasis on the *Razón de amor, la poesía de tipo tradicional*, and Santillana; on Garcilaso, San Juan de la Cruz, Fray Luis de León, and Herrera; on Góngora and Quevedo. C-L: Medieval and Renaissance Studies. One course. *Wardropper*

262. The Romantic Movement. Principal manifestations of romanticism in Hispanic literature; poetry (Becquer, Espronceda, Rosalía de Castro), drama (Rivas, Zorilla), and the novel (Isaacs, Marmol). One course. *Pérez*

275. Modern Spanish Poetry. Juan Ramón Jiménez, Unamuno, Antonio Machado, the Generation of 1927, and the contemporary poets. One course. *Osuna*

276. Modern Spanish Drama. The theater of Benavente, Valle-Inclán, Lorca, Casona, Buero Vallejo, Sastre, and Arrabal. One course. *Osuna*

277. Modern Spanish Novel. From the Generation of 1898 to the present. One course. *Osuna*

Courses Currently Unscheduled

122. Modern Mexico

123S. Latin-American Literature and Revolution

ROMANCE LANGUAGES (RL)

218. The Teaching of Romance Languages. Evaluation of objectives and methods; practical problems of language teaching at the elementary, secondary, and college levels; analysis of textbooks, tests, and audiovisual aids. Taught in English. One course. *Hull*

Courses Currently Unscheduled

150. Authorship in the Cinema

THE MAJOR IN FRENCH OR SPANISH

Prerequisite. French or Spanish 74 or 76 or equivalents.

Major Requirements. *French:* A total of eight courses numbered 100 or above. These must include 101, 102, and at least three courses above 140. *Spanish:* A total of eight courses numbered 100 or above. These must include two of the following: 101, 102, 105, 106; and at least three courses above 140. Courses numbered 120 through 129 (French and Spanish) are taught in English and do not count toward the major.

Study Abroad. Students are strongly urged to study abroad, since this is the best way to achieve language proficiency and to acquire an intimate knowledge of a country's culture. A maximum of two courses per semester, or one per summer, may be counted toward the major. (The summer course restriction does not apply to Duke-sponsored programs.)

Suggested Work in Related Disciplines. In order to give perspective to a student's program, majors in French or Spanish will normally select, with the approval of the major adviser, appropriate courses from such fields as: (1) other languages and literatures; (2) history; (3) philosophy; (4) music and art; and (5) linguistics.

THE FRENCH CURRICULUM

The French Curriculum is an offering of courses taught in French. Unlike the French courses offered by the Department of Romance Languages, however, in which

language or literature is the essential subject matter, these are courses in various departments where French is simply the medium of instruction. Prerequisite: French SAT score of 600 (or the same score on the Placement Test), a score of 3 on the Advanced Placement Test in French, or prior completion of a French course numbered above 70.

Art 136: Gothic Cathedrals. *Bruzelius*

History 23: Europe to the Eighteenth Century. *Witt*

Music 119: The Humanities and Music. *Bartlet or Seebass*

Sociology 24S: Paris and Montreal in 1900 and 1968. *Tiryakian*

These courses appear also in the listings of the several departments. They meet distributional and Field of Knowledge requirements as these are specified elsewhere in the undergraduate *Bulletin*. They do *not* meet requirements for the major in French.

Russian

For courses in Russian, see Slavic Languages and Literatures.

Science, Technology, and Human Values

Associate Professor Roland, *Director*

The Program in Science, Technology, and Human Values offers students the opportunity to develop a comprehensive view of science, medicine, or technology in social, historical, and ethical terms. Although a major is not available in this program, the course of study will enrich the understanding of one's profession for the future scientist, physician, or engineer and will broaden the appreciation of activities in these areas for others.

COURSE OF STUDY

Duke courses pertinent to the program are classified according to three areas: science, medicine, or technology. Within each area, the courses are further divided according to the approach: ethical, analytical (historical, philosophical, or sociological), or policy-centered. Each student entering the program designates, for purposes of advising, an area of primary interest and then selects a program of five courses (four for engineering majors) covering all three approaches. Individual programs, selected from more than fifty courses, are tailored to each student's interests.

Students in the program focus their course work and individual interests through a year-long interdisciplinary seminar offered in the senior year (Interdisciplinary Course 107S, 108S).

Full details concerning the program and courses in Science, Technology, and Human Values may be obtained by writing or calling the Director.

ELIGIBILITY AND CERTIFICATION

Students normally apply to the program at any time before the end of their junior year. On the basis of the expressed area of primary interest, each student is assigned a faculty adviser from the program steering committee, with whom he or she designs a program to suit his or her particular interests. To students who complete the program, Duke University gives official recognition of their participation.

Slavic Languages and Literatures

Professor Krynski, *Chairman*; Assistant Professor Pugh, *Director of Undergraduate Studies*; Assistant Professor Andrews, *Supervisor of Language Instruction*; Associate Professor Emeritus Jezierski; Part-time Instructor Flath

RUSSIAN (RUS)

1-2. Elementary Russian. Introduction to understanding, speaking, reading, and writing. Audiolingual techniques are combined with required recording-listening practice in the language laboratory. Two courses. *Staff*

14. Intensive Russian. Russian 1 and 2 combined in one course. Two meetings daily, as well as daily computer and language laboratory work. One course. *Staff*

63, 64. Intermediate Russian. Intensive classroom and laboratory practice in spoken and written patterns. Reading in contemporary literature. Prerequisites: Russian 1 and 2 or two years of high school Russian. Two courses. *Staff*

91, 92. Advanced Russian Conversation and Readings. Nineteenth and twentieth century literature in the original. Conducted in Russian. Prerequisite for 91: Russian 63, 64 or equivalent; for 92: Russian 91. Two courses. *Staff*

91P, 92P. Preceptorial. Elective preceptorials for students enrolled in Russian 91, 92. *Staff*

100. Studies in Russian Culture. Introduction to the culture and political system of the USSR. (Taught in the USSR in Russian or English depending on placement.) C-L: Comparative Area Studies. One course. *Andrews*

124. Masters of Russian Short Fiction. Pushkin, Gogol, Turgenev, Tolstoy, Dostoevsky, Chekhov, Babel, and others. Readings in English. C-L: Comparative Area Studies. One course. *Staff*

161, 162. Introduction to the Russian Novel. Outstanding works. 161: Lermontov, Gogol, Turgenev, Goncharov, and Tolstoy. 162: Dostoevsky, Bely, Sologub, Bunin, and Gorky. Readings in English. C-L: Comparative Area Studies. Two courses. *Krynski*

172. Russian Prison Camp Literature. A survey of works in translation; including Avvakum, Dostoevsky, Nabokov, and Solzhenitsyn. One course. *Staff*

175. Tolstoy. Introduction to life and works. Readings in English will include *War and Peace*, *Anna Karenina*, the shorter fiction, dramatic works, and essays. Tolstoy's impact on the literature and thought of today, in and outside of Russia. C-L: Comparative Area Studies. One course. *Staff*

176. Dostoevsky. Introduction to life and works. Emphasis on his relevance to today's world. Readings in English of major works; close study of *Crime and Punishment*, *The Idiot*, and *The Brothers Karamazov*. Historical overview of critical reaction in Russia and abroad. C-L: Comparative Area Studies. One course. *Staff*

177. Introduction to the World of Chekhov. Close scrutiny of selected prose and dramatic works. Readings in English. C-L: Comparative Area Studies and Drama 125. One course. *Krynski*

180. Twentieth-Century Russian Literature. A survey of Russian prose, poetry, and plays by representative authors from Blok to Nabokov. Attention to nonconformist and émigré writers. Readings in English. One course. *Staff*

185S. Introduction to Slavic Linguistics. Basic introduction to linguistic terminology; emphasis on synchronic linguistic theory in the East, West, and South Slavic areas. Phonological, morphological, and syntactic structure of contemporary standard Russian. C-L: Comparative Area Studies and Linguistics. One course. *Andrews*

186S. History of the Russian Language. The development of the Russian language from the eleventh century, with consideration of literary and dialectal features. Readings in Russian. Prerequisite: second year Russian or consent of instructor. C-L: Comparative Area Studies and Linguistics. One course. *Pugh*

187. Russian and Central European Writers on Communism. Novels, essays, and philosophical works by Arendt, Koestler, Solzhenitsyn, and Milosz, in translation, against the works of Orwell, Silone, and Whittaker Chambers. One course. *Krynski*

191, 192. Independent Study. Directed reading and research. Open only to qualified students by consent of Director of Undergraduate Studies. Two courses. *Staff*

193, 194. Independent Study. Directed reading and research for qualified seniors. Prerequisite: consent of Director of Undergraduate Studies. Two courses. *Staff*

195. Advanced Russian. Review of grammar with an emphasis on the refinement of oral and written language skills. Prerequisite: Russian 92 or consent of instructor. One course. *Staff*

196. Readings in Modern Russian. An intensive reading and conversation course based on contemporary Russian literary and Soviet press texts, emphasizing problems in Russian-English and English-Russian translation. Prerequisite: Russian 195 or consent of instructor. C-L: Comparative Area Studies. One course. *Staff*

For Seniors and Graduates

201, 202. Russian Novel of the Nineteenth Century. 201: 1830-1870. 202: 1870-1900. Prerequisite: Russian 161, 162 or equivalent. C-L: Comparative Area Studies. Two courses. *Krynski*

225. Tolstoy. *War and Peace* and other works. Prerequisite: Russian 175 or equivalent. C-L: Comparative Area Studies. One course. *Staff*

232. Dostoevsky. Emphasis on *The Brothers Karamazov* and the theory of the novel. Prerequisite: Russian 176 or equivalent. C-L: Comparative Area Studies. One course. *Staff*

Courses Currently Unscheduled

183. Slavic Drama and Theater of the Twentieth Century

POLISH (POL)

11. Beginning Polish. Rapid survey of main elements of grammar. Emphasis on aural comprehension and pronunciation. Prerequisite: one year of any foreign language at the college level. Does not count toward a major in Russian. One course. *Krynski*

12. Intermediate Polish. Elements of grammar continued; speaking and reading. Prerequisite: Polish 11 or consent of instructor. Does not count toward a major in Russian. One course. *Krynski*

174. The Poles: Literature and Society, 1940-1980. Representative literary masterpieces. Emphasis on literary avant-garde of the 1950s and 1960s and on the dissident writings since 1975 and their impact on society. Readings in English. C-L: Comparative Area Studies. One course. *Krynski*

THE MAJOR

Prerequisites. Russian 1-2 and 63, 64 or equivalent.

Major Requirements. A minimum of eight courses in the department. All majors must take the following courses: Russian 91, 92, 195, 196, plus four courses in literature.

Students contemplating graduate work may elect a more intensive program consisting of ten courses. An in-depth knowledge of Russian literature or some knowledge of Polish language and/or literature will facilitate admission to graduate school and subsequent study in the field.

Sociology (SOC)

Professor Land, *Chairman*; Associate Professor Wilson, *Director of Undergraduate Studies*; Professors Back, Kerckhoff, Maddox, Myers, Palmore, Preiss, Simpson, Smith, and Tiryakian; Associate Professors Campbell, George, and Gereffi; Assistant Professors O'Rand, Spenner, and Stark; Adjunct Professor Manton

Sociology combines an appreciation of human beings' capacity for self-realization with a scientific understanding of the causes and consequences of their social behavior. Each course aims to develop both the analytical and critical skills necessary for understanding and evaluating social institutions and social change. Emphasis is upon contemporary research and the use of sociological data in tackling social problems. Active involvement in the learning process is fostered through seminars, independent study, honors work, and internships.

10D. Introduction to Sociology. Structure and dynamics of groups, organizations, and institutions; social behavior over the life cycle; social control and deviance; population and social ecology; formation and change of societies. Two lectures and one discussion section. One course. *Simpson or Tiryakian*

Social Issues of Contemporary Society. Topics vary from semester to semester. One course each. *Staff*

20S. Individual and Society

21S. American Demographics

22S. The Third World

23S. Social Organization

24S. Social History

25S. Deviance

101. Contemporary American Society. Social trends and social problems and their effects on individuals and society. Urbanization; bureaucracy; distribution of wealth, income, and power; status of minorities. One course. *Kerckhoff*

102. America in the Modern World System. Sociological aspects of twentieth-century involvement of the United States in international economic, political, and social affairs, including the notion of American exceptionalism, the roots of American foreign policy, the role of the United States transnational corporations, the contemporary welfare state, the crisis of democracy debate, and the North-South dialogue. C-L: Comparative Area Studies. One course. *Gereffi*

106. Social Psychology. C-L: Psychology 116. One course. *Costanzo or George*

110. Comparative Sociology. Comparative sociological studies focusing on diverse societies of the world. Topics include population and migration, social stratification, the organization of work, urban forms, law and social control, the family, development and global interdependence, culture and communication. C-L: Comparative Area Studies. One course. *Gereffi, Myers, Smith, Stark, or Tiryakian*

SOCIAL DIFFERENTIATION

111. Inequality in America. Differences in social position in the United States as they relate to income, prestige, and power. Primary focus on the process of achievement, including level of education and occupational position, while controlling for race, sex, and age. C-L: Women's Studies. One course. *Kerckhoff or O'Rand*

116. Black and White Relations in America. The history and changing nature of interaction between blacks and whites, including the sources and consequences of discrimination, integration, and black power. One course. *O'Rand or Palmore*

118. Sex Roles and Society. Nature and acquisition of sex roles. Cross-cultural variations. Developing nature of sex roles in American society. C-L: Comparative Area Studies and Women's Studies. One course. *O'Rand*

DEVIANCE

Sociology 120-123 are designed as a sequence and might optimally be taken in that order, with Sociology 120 being recommended preparation for 121, 122, and 123. However, there are no prerequisites.

120. Perspectives on Deviant Behavior. Development and distribution of deviant social behavior, treating such topics as social disorganization; stress and strain; cultural and labeling theories in relation to crime and delinquency, drug addiction, homosexuality, suicide, or others. One course. *Simpson*

121. Law Enforcement and Judicial Systems. Development and functions of criminal law. Perceptions and handling of crime and deviant behavior by police, prosecutors, and courts. Ethical, fiscal, and operational problems of achieving justice; cross-cultural comparisons. One course. *Staff*

122. Punishment and Treatment of Deviants. Concepts of punishment and rehabilitation. Programs and facilities for deviants. Structure and operation of "total" institutions, such as prisons and hospitals. Problems of returning to family and community life. One course. *Simpson*

123. Social Aspects of Mental Illness. Theoretical and practical sociological contributions to problems of etiology, definition, law, and treatment; comparisons with other contributions; questions of public policy and programs. One course. *Back or Palmore*

RESEARCH

125. Strategies of Comparative Analysis. See C-L: Interdisciplinary Course 125; also C-L: Anthropology 125, Comparative Area Studies, History 137, and Political Science 125. One course. *Gereffi or Stark*

132. Methods of Data Collection. Principles of social research, design of sociological studies, sampling, and data collection with special attention to survey techniques. One course. *Myers*

133. Statistical Methods. Elementary statistical techniques and their application to the analysis and interpretation of social science data. Theory of inference is stressed. Not open to students who have had Economics 138 or Mathematics 53, 117 or 136. C-L: Psychology 117. One course. *Staff*

134. Using Sociology. An analytic framework for understanding the ways sociology has been used; ethical issues and consequences. One course. *Campbell or Smith*

135. Computers and Society. The impact of the computer and related technologies on society. Topics include the effects on individual freedom and the nature of work, the implications of high speed information retrieval, and others. One course. *Campbell or Smith*

138. History of Social Thought. Theories of society and social relations in the writings of Montesquieu, Rousseau, Comte, Marx, Weber, Durkheim, Simmel, Veblen, Sorokin, and others. The history of sociology in relation to philosophical cur-

rents, social movements, and transformation of the modern world. One course. *Tiryakian or Wilson*

139. Marxism and Society. A critical appraisal of Marxism as a scholarly methodology for understanding human societies. The basic concepts of historical materialism, as they have evolved and developed in historical contexts. Topics include sexual and social inequality, alienation, class formation, imperialism, and revolution. Core course for the program in Perspectives on Marxism and Society. C-L: Anthropology 139, Education 139, History 186, and Interdisciplinary Course 139. One course. *Fox or Wilson*

POPULATION AND ECOLOGY

140. Environment and Society. Impact of technological and social change on sociological and environmental conditions. A multidisciplinary approach. One course. *Myers*

143. Business and Labor. Theories and current research on the interlocking roles of business and labor in the United States and elsewhere. One course. *Gereffi or Stark*

LIFE COURSE AND INSTITUTIONS

150. The Changing American Family. Structure, organization, and social psychology of marital, parental, and sibling relations over the life cycle of a family; courtship, marriage, family dissolution in relation to contemporary American society; deviations from and alternatives to the traditional nuclear family. C-L: Women's Studies. One course. *Kerckhoff or Simpson*

151. Sociology of Religion. The religious factor in modern society and the social factor in modern religion. Major sociological theories and marginal religious groupings. One course. *Tiryakian or Wilson*

152. Educational Settings and Processes. Structure and operation of schools, colleges, and universities. One course. *Campbell or Kerckhoff*

153. Sports and Society. The effect of sports on people, their self-image, and social roles. Relation of sports as an institution to the family, education, economics, and politics. One course. *Wilson*

154. Art and Literature in Society. An analysis of the social relations of the world of the arts (painting and sculpture, music, and literature) with emphasis upon creative artists, art publics, art organizations, and art works as they function in their social-cultural milieux. One course. *Back or Tiryakian*

155. Work in America. The labor process. The changing meaning of work. Job satisfaction. Choosing jobs and disengaging from the work role. C-L: Women's Studies. One course. *Simpson, Stark, or Wilson*

156. Sociology of Science. The social organization of science: the social relations between scientists, laboratory life, and professional associations. Its impact on the methods and processes of scientific discovery. Historical and contemporary materials from biology, chemistry, and physics. One course. *O'Rand*

157. The Legal Profession and the Law. Development of the American legal profession, emphasizing the recruitment and training of lawyers, the ways lawyers' work is organized, the role of professional associations, the determinants of success in legal practice, and the influence of legal ethics on practice. One course. *Simpson, Tiryakian, or Wilson*

161. Aging and Death. Basic theories and demography of human aging; social problems caused by increased longevity; social-psychological factors in attitudes to-

ward death, mortality, accidental death, suicide, and murder. One course. *George or O'Rand*

162. Health and Illness in Society. Relations between patients and health professionals, and utilization of resources for health care. One course. *Back*

165. Occupations and Career Development. How occupations organize and control labor markets, define services, chart career lines, and develop and sustain occupational identities. C-L: Women's Studies. One course. *Simpson or Spenner*

167. Uses and Abuses of Power. Theories of and research on political power at the community, national, and international levels. C-L: Women's Studies. One course. *Gereffi, Smith, or Stark*

169. Psychosocial Aspects of Human Development. See C-L: Psychology 130; also C-L: Human Development and Interdisciplinary Course 180. One course. *Martin Lakin and Maddox*

SOCIAL ISSUES AND PROCESSES

170. Mass Communication. An analysis of the role of radio, the press, magazines, movies, and television. An examination of the selective audiences, content characteristics, controlling elements, and organizational structure of the various media. Comparative Canadian material considered where feasible. C-L: Canadian Studies, Comparative Area Studies, and Film. One course. *Smith*

171. Comparative Health Care Systems. The interaction of historical, political, economic, legal/ethical, and sociological factors in the organization and operation of health care systems in the United States, the United Kingdom, Sweden, and elsewhere. C-L: Comparative Area Studies. One course. *Maddox*

173. Social Conflict and Social Movements. Mobilization and strategy of riots, demonstrations, public interest groups, social movements, and revolutions. One course. *Wilson*

175. Contemporary International Problems: Their Historical Origins and Their Implications for Future Policy. C-L: Anthropology 109, Comparative Area Studies, History 109, Interdisciplinary Course 109, Political Science 160, and Religion 156. One course. *Staff*

178. Colonialism, Neocolonialism, and Internal Colonialism. Ideological, structural, and socio-psychological dimensions of colonization and decolonization in the modern world, with special reference to sub-Saharan Africa. C-L: Comparative Area Studies. One course. *Tiryakian*

179. Sociology of Nationalism. A comparative sociological study of major nationalist movements: Western nationalism in the nineteenth century, anti-Western movements of the Third World, and regional movements within and against established nation-states. C-L: Canadian Studies and Comparative Area Studies. One course. *Tiryakian*

180. Modern Revolutions. Comparative analysis of the causes, processes, and outcomes. French, Russian, and Chinese cases as well as recent revolutions and upheavals. C-L: Comparative Area Studies. One course. *Stark or Tiryakian*

181. Contemporary Socialist Societies. Comparison of forms of inequality, the organization of work, and patterns of opposition. C-L: Comparative Area Studies. One course. *Stark*

182. Media in Comparative Perspective. See C-L: Interdisciplinary Course 182; also C-L: Comparative Area Studies and Political Science 180. One course. *Smith*

184. An Introduction to Canada and Canadian Issues. See C-L: Interdisciplinary Course 184; also C-L: Canadian Studies, Comparative Area Studies, History 184, and Political Science 184. One course. *Leach*

189. The Americas: a Survey of the Forces Shaping the Hemisphere. See C-L: History 189; also C-L: Anthropology 189, Comparative Area Studies, Interdisciplinary Course 189, and Political Science 110. One course. *Bergquist*

193, 194. Independent Study. Prerequisite: consent of instructor. Two courses. *Staff*

195S, 196S, 197S. Seminar in Special Topics. Three courses. *Staff*

For Seniors and Graduates

201S. Social Change. Comparisons of alternative theoretical schools of social change and societal transformations: functional, evolutionary, conflict, Marxist, dependency, and world systems perspectives. C-L: Comparative Area Studies. One course. *Gereffi or Tiryakian*

203. Comparative Aspects of Societal Transformation. Comparative perspectives on the major axes of social differentiation within societies (age, sex, class, religion) and their related forms of social organization (kinship networks, labor markets, professions, social movements). Ecological, demographic, and ideological factors in societal transformation. C-L: Comparative Area Studies. One course. *Simpson or Smith*

204. The Dynamics of Global Interdependence. Emergence and structure of interdependence. Stability and change. Societal interdependence at the social, cultural, political, and economic levels. C-L: Comparative Area Studies. One course. *Gereffi or Tiryakian*

233. Culture, Religion, and Modernity. The role of ideas and ideology in the process of social change. The origins and development of modernity in Western and non-Western societies. Patterns of religious expression and cultural integration. One course. *Tiryakian*

234S. Political Economy of Development: Theories of Change in the Third World. See C-L: Political Science 234S; also C-L: Anthropology 234S, Comparative Area Studies, History 234S, and Interdisciplinary Course 234S. One course. *Bergquist, Fox, Gereffi, Smith, or Valenzuela*

241. Social Stratification. The nature of hierarchical and vertical differentiation of the economic, political, and prestige structures in modern societies. The interrelationship of class, status, and power strata and their influence on social institutions, personality structure, and group and individual behavior. The transmission of inequality from one generation to the next. C-L: Comparative Area Studies. One course. *Campbell, O'Rand, or Stark*

243. Population Dynamics and Social Change. Social scientific aspects of the determinants and consequences of population trends. C-L: Comparative Area Studies. One course. *Myers*

244. Human Ecology and Urban Systems. Origins and development of human ecology theory, growth of cities and urban systems, residential segregation of social classes and racial and ethnic groups. C-L: Comparative Area Studies. One course. *Myers or Smith*

255. Political Sociology. Pluralist, elite, and class theories of the relationship between state and society. Topics include: recent debates on the welfare state, social control, political participation, and state-society relations in socialist economies. C-L: Political Science 255. One course. *Smith, Stark, or Tiryakian*

276S. Social Structure and the Life Course. The organization of education, career sequences, cohort patterns, role definitions, adolescence, old age, and retirement; variations by race and sex. One course. *Campbell, Maddox, or O'Rand*

277S. Social Patterns of Personal Development. The effects of the family, school, work, and other institutional settings on the individual. C-L: Women's Studies. One course. *Kerckhoff or O'Rand*

279S. Social Psychology. Study of group structure and processes. Dynamic relations within and between groups and the links between groups and societies. One course. *Back*

280S. Contemporary Sociological Theory. An analysis of the structure and foundations of recent formulations of such theoretical approaches as phenomenological sociology, exchange theory, critical theory, structuralism, neo-Marxist sociology, sociobiology, and action theory. One course. *Tiryakian or Wilson*

281S. Development of Sociological Theory. Sociological thought from Comte to contemporary theorists, with particular focus on Parsons and the Parsonian School. The societal and institutional context of the development of sociological theory and paradigms. One course. *Tiryakian or Wilson*

282S. Canada. See C-L: Interdisciplinary Course 282S; also C-L: Anthropology 282S, Canadian Studies, Comparative Area Studies, History 282S, and Political Science 282S. One course. *Leach*

293. Introductory Statistical Analysis. Basic descriptive statistics, regression and correlation, t-tests and the analysis of variance, chi square techniques, and other topics. Stress on practical applications. Statistical computing using SPSS and other programs. One course. *Campbell or Spenner*

294. Intermediate Statistical Analysis. The general linear model and its application in methods of multivariate statistical analysis: analysis of variance and covariance, multiple regression and path analysis, and log-linear models for categorical data. Statistical computing using SPSS and other programs. Prerequisite: Sociology 293 or equivalent. One course. *Campbell or Spenner*

296S. Research Methods and Methodology. Presuppositions and basic questions in the methodology of social scientific research. Alternative research designs and the assumptions and methods of analysis. One course. *Back, Campbell, or Smith*

297S. Data Collection and Analysis. Survey of methods of sociological data collection: observation, experiments, surveys, and historical studies. Issues in the analysis of data: organizing data, coding, indexes, descriptive and analytic measures. Problems of interpretation, verification, and dissemination of research results. One course. *Back, Campbell, Kerckhoff, or Smith*

298S, 299S. Seminar in Selected Topics. Substantive, theoretical, or methodological topics. Two courses. *Staff*

COURSES CURRENTLY UNSCHEDULED

145. The Modern City in Comparative Perspective

177. The Community: Myths and Realities

THE MAJOR

Prerequisite. Sociology 10D or an equivalent course with consent of the Director of Undergraduate Studies.

Major Requirements. Eight courses above 101: Sociology 132, 133, 138, one 200-level course, and four others. Only one independent study credit can be applied to the major; it may not substitute for a required course.

A student may complete a second major in sociology. Requirements and advising are the same for the second major as for the first major.

A Handbook for Sociology Majors, available in the office of the Director of Undergraduate Studies, describes areas of concentration, the honors program, and the Sociology Union. It also describes the departmental advising system and the interests of the faculty.

Statistics

Although there is no undergraduate major in statistics, a concentration in statistics is available as part of a major in mathematics or economics. Statistics courses at both introductory and advanced levels are also offered by several other departments. For detailed information on statistics courses, consult *Statistics at Duke*, available from the Department of Mathematics. (See also Institute of Statistics and Decision Sciences in the Special Programs section of this bulletin.)

Swahili

For courses in Swahili, see Asian and African Languages.

University Writing Program

Assistant Professor Gopen (English), *Director*

The writing requirement may be fulfilled by successfully completing University Writing Course 4, 5, 6, or 7, each of which involves expository themes and regular individual conferences. Despite the distinction in titles and topics, all these courses deal with the same core concerns and have the same objective: they are intended to help students of all abilities to a greater understanding of the language and thereby to a greater control of their thinking process.

4. Principles and Practice of Writing. Designed for those who are prepared to write college-level prose but think they will benefit from a review of the principles of good writing. Some themes may be based on British and American prose. One course. *Staff*

5. Persuasive Writing. Themes based chiefly on readings in nonfiction prose of a single topic. One course. *Staff*

6. Interpretive Writing. Themes based chiefly on readings in literature. One course. *Staff*

7. Writings on Special Topics. Themes and readings vary with the topic of each section. Enrollment in some sections may be restricted to students in specified programs. One course. *Staff*

For other courses in writing, see listings for Department of English.

Women's Studies

Associate Professor J. O'Barr (political science), *Director*

The Program in Women's Studies provides students with an understanding of the forces that shape the position of women in society and develops an appreciation of women's experiences. Courses in women's studies are offered through twenty academic departments by fifty faculty members and are open to all Duke students. A

certificate is offered to students who complete the requirements described below. Students working toward the certificate declare a major in a departmental discipline and utilize women's studies as a valuable additional area of academic concentration. Students earning the certificate are eligible for graduation with distinction in women's studies.

To qualify for a certificate in women's studies, students are required to take a total of five courses. The first is an introductory survey course, Interdisciplinary Course 103, *An Introduction to Women's Studies*. The second required course is a basic course in gender roles. This requirement is based on the premise that in order to understand the position of women in society, students must understand the process of socialization and enculturation. Four courses are available in this area: two in anthropology, one in psychology, and one in sociology. All four of these courses present theoretical perspectives on gender in specific disciplines and provide an important introduction to the study of women, using a multidisciplinary approach. The third requirement for the certificate is that students complete two courses in any of the humanities or sciences that deal exclusively with women's experiences. The fourth and final requirement is that students take one course that emphasizes the way in which women's experiences relate to various aspects of society and culture. This combination of courses for the women's studies certificate is designed to create a coherent academic curriculum in which students are introduced not only to the central concepts in women's studies, but also to the way in which the analysis of women's experiences fits into a broader study of society, culture, and the interactions of different groups.

The courses listed below are offered regularly and can be used to fulfill the requirements for the certificate. For a more detailed description of each course, consult the listing in the appropriate department.

Introductory Course

Interdisciplinary Course 103. *An Introduction to Women's Studies*. *J. O'Barr*

Gender Role Courses

Anthropology 115. *Gender: A Cross-Cultural Perspective*. *Staff*

Anthropology 215S. *The Anthropology of Women: Theoretical Issues*. *Staff*

Psychology 170B. *Psychology of Women*. *Morgan*

Sociology 118. *Sex Roles and Society*. *O'Rand*

Women's Studies Courses

Anthropology 272S. *Marxism and Feminism*. *Smith*

Arabic 173. *Women in Modern Arabic Literature*. *Cooke*

English 169. *American Women Writers*. *Tompkins*

French 159. *Feminist Fiction*. *Orr*

History 169S, 170S. *The Social History of American Women*. *A. Scott*

History 171. *A History of Women in Europe*. *Neuschel*

Interdisciplinary Course 211. *Colloquium in Feminist Theory and the Disciplines*. *Staff*

Philosophy 122. *Philosophical Issues in Feminism*. *Jackson*

Political Science 163. *Gender, Politics, and Policy*. *J. O'Barr*

Religion 109. *Women in the Biblical Tradition: Image and Role*. *C. Meyers*

Religion 125. *Women and Sexuality in the Christian Tradition*. *Clark*

Courses on Women in Relation to Society and Culture

Anthropology 131. *Socialism and Society in China*. *Weller*

Anthropology 137. *Incest, Adultery, and Other Problems in Kinship and Marriage*. *Domínguez or Quinn*

Comparative Literature 177. *Film Theory*. *Gaines*

Comparative Literature 185. *Psychoanalysis, Literature, and Film*. *Gaines*

English 188. *Literature and the Film*. *Clum or Gaines*

History 160. *The United States from the New Deal to the Present*. *Chafe*

History 227-228. *Recent United States History: Major Political and Social Movements*. *Chafe*

Political Science 129. *Political Participation*. *Paletz*

Political Science 187. *Politics and the Libido*. *Paletz*

Psychology 150S. *Hormones and Behavior*. *B. Erickson*

Religion 234. *Early Christian Asceticism*. *Clark*

Sociology 111. *Inequality in America*. *Kerckhoff or O'Rand*

Sociology 150. *The Changing American Family*. *Kerckhoff or Simpson*

Sociology 155. Work in America. *Simpson, Stark, or Wilson*
 Sociology 167. Uses and Abuses of Power. *Gereffi, Smith, or Stark*
 Sociology 277S. Social Patterns of Personal Development. *Kerckhoff*

In addition to these regularly offered, cross-listed courses, rotating topic courses are offered by faculty members in several departments focusing on pertinent issues in gender and women's studies. Frequently, house courses, taken for half credit through Duke dormitories, are also offered and sponsored through Women's Studies. Students should consult the Women's Studies Program each semester for information on all courses. The following list provides examples of courses offered previously in the category of rotating topics. Some of them are particular sections of special topics courses:

Courses on Women

Anthropology 180. Sociobiology and Gender. *Wright*
 Anthropology 180. Anthropology and Cultural Bias. *Quinn*
 Classical Studies 195S, 196S. Sex Roles in Antiquity. *Staff*
 English 26S. Twentieth-Century Identity Novels. *Pope*
 English 26S. American Women's Poetry. *Pope*
 English 131. Virginia Woolf. *Mellown*
 English 139S. Modern British Feminist Novel. *Mellown*
 English 179S. Portraits of the Lady: Studies in the Literary Images of Women. *Pope*
 French 104S. Women in Contemporary France. *Bryan or Orr*
 French 145S. Women Writers of the Renaissance. *Tetel*
 French 290S. Studies in a Contemporary Figure: Wittig. *Tetel*
 German 103S. Contemporary Women Writers in East and West Germany. *Westphal-Wihl*
 History 196. Modern European Women. *Neuschel*
 History 196. Issues in Third World Women's History. *Ewald*
 Political Science 200A. Contemporary American Feminism. *J. O'Barr*
 Psychology 171S. Contemporary Feminist Theory. *Staff*
 Public Policy Studies 264S. Women and Justice. *Stack*

Courses on Women In Relation to Culture and Society

Anthropology 126. Middle East: Wars, Revolutions, and Social Change. *Dominguez*
 Comparative Literature 128. Writings in the Pan-African Tradition. *Willis*
 Comparative Literature 282. Structuralism, Post-Structuralism, and After. *Tompkins*
 English 26S. Solitary in Fiction. *Pope*
 English 139S. The Bloomsbury Group. *Mellown*
 English 154. American Literature: 1915-1960. *Pope*
 English 163. Twentieth-Century American Poetry. *Pope*
 English 189S. Sexualities in Film and Literature. *Gaines*
 French 122. The French Film. *Worth*
 French 167. Contemporary French Life and Thought. *Bryan or Orr*
 French 169. The Contemporary Novel in French Canada. *Tetel*
 History 75, 76. Third World and the West. *Ewald*
 House Course. Career and Family Options. *Staff*
 Psychology 116. Social Psychology. *George*
 Public Policy Studies 118S. Ethical Dilemmas and Social Policy. *Stack*
 Public Policy Studies 166, 195S. Child Policy in the United States. *Stack*
 Public Policy Studies 195S. Human Service Bureaucracy. *Stack*
 Sociology 106. Social Psychology. *George*
 Sociology 161. Aging and Death. *George*

THE PROGRAM

In addition to offering courses and a certificate representing a concentration in women's studies, the Women's Studies Program sponsors lectures, films, discussions, conferences, and internships that focus on women's issues. It provides academic advice and assistance to students earning certificates in the program. Additional information on courses, the women's studies certificate, and other women's studies opportunities is available at the Office of Women's Studies, 207 East Duke Building.

Writing

See University Writing Program.

Zoology (ZOO)

Professor Nicklas, *Chairman*; Professor Fluke, *Director of Undergraduate Studies*; Professors Barber, Costlow, Gillham, Klopfer, Livingstone, McClay, Staddon, Tucker, Vogel, Wainwright, Ward, and H. Wilbur; Associate Professors Forward, Lundberg, H. Nijhout, Rausher, Ruderman, and Sutherland; Assistant Professors Conner, Roth, and Uyenoyama; Professors Emeriti Bailey, Bookhout, Gregg, Schmidt-Nielsen, and K. Wilbur; Adjunct Professor Schmidt-Koenig; Lecturer M. Nijhout

The introductory course, Principles of Biology, is listed under Biology in this bulletin. See also Introductory Animal Diversity, below.

In addition to those courses bearing the S or T suffix, and independent study, the following zoology laboratory courses also count for the requirement for small-group learning experiences: 204L, 216L, 226L, 258L.

COURSES GIVEN ON THE DURHAM CAMPUS

49S. Structure. The structural design principles that underlie function, failure, and fancy in natural and manmade things. Gaps and connections between science and art. Lectures and tasks for minds and hands on worldly designs. Does not count toward the divisional or fields of knowledge requirements. One course. *Wainwright*

74L. Introductory Animal Diversity. Structure, functions, and habits of animals; classification, evolutionary origins, and phylogenetic relationships of major extant groups. One course. *Rausher or Roth*

100. Perspectives on Living Systems: Organization of Life. For upperclass students not intending majors in a biological science. Not open to students who have taken Biology 14L. May be substituted for Biology 14L only with the consent of the Director of Undergraduate Studies in zoology. One course. *Vogel*

103L. Principles of Ecology. Physical, chemical, and biological processes that determine the distribution and abundance of animals, emphasizing population dynamics, species interaction, biogeography, nutrient cycling, and energy flow through food webs. Prerequisites: introductory biology and Mathematics 31. Laboratory includes fieldwork. One course. *Livingstone*

108L. Developmental and Comparative Anatomy of Vertebrates. The embryology, anatomy, and evolutionary development of vertebrate organ systems. Prerequisite: introductory biology. One course. *Lundberg*

117. Introduction to Genetics. The effects of heredity and environment upon the individual and the population. Readings and discussions dealing with human problems. Not intended for students whose professional goals are genetics or cell biology. Students may not receive credit for both Zoology 117 and 180. Prerequisite: introductory biology or consent of instructor. C-L: Genetics—The University Program. One course. *Ward*

145. Physical Radiations and Biological Significance. Kinds of physical radiations; related biological hazards and benefits. Levels of concern for plants and animals, including humans. Protection, cellular repair processes. Prerequisites: introductory biology and Chemistry 12. One course. *Fluke*

151L. Principles of Physiology. Functional aspects of respiration, circulation, neural and hormonal coordination, water balance, metabolism, thermoregulation, and responses to special environments. Prerequisites: introductory biology and Chemistry 12. One course. *Conner or Tucker*

160. Principles of Cell Biology. Structure and function of organelles, metabolism, and regulatory mechanisms. Prerequisites: introductory biology and Chemistry 12. One course. *McClay or M. Nijhout*

160L. Principles of Cell Biology. See Zoology 160. Includes laboratory. One course. *McClay or M. Nijhout*

178. Functional Morphology. Structural basis of function of tissues, organs, and organisms in various phyla. Not open to students who have had Zoology 179. Prerequisite: Zoology 108 or 175 or 176 or consent of instructor. One course. *Wainwright*

179T. Tutorial in Functional Morphology. See Zoology 178. Essays and oral reports. Not open to students who have had Zoology 178. Prerequisite: consent of instructor. One course. *Wainwright*

180. Principles of Genetics. Structure and properties of genes and chromosomes in individual organisms and in populations. Prerequisite: introductory biology. C-L: Botany 180, Botany 280, Genetics—The University Program, and Zoology 280. One course. *Antonovics, Boynton, and Gillham*

191, 192. Independent Study. For junior and senior majors with consent of Director of Undergraduate Studies and supervising instructor. Three courses of 191, 192, 193T, and 194T, maximum. Credit to be arranged. *Staff*

193T, 194T. Tutorial. For junior and senior majors with consent of the Director of Undergraduate Studies and supervising instructor. Three courses of 191, 192, 193T, and 194T, maximum. Credit to be arranged. *Staff*

196D. Human Sex and Sexuality. Anatomical, physiological, and psychological aspects of sexuality. Weekly lectures by specialists. Does not satisfy major, divisional, or fields of knowledge requirements. Pass/fail grading only. Half course. *Klopfer and staff*

For Advanced Undergraduates and Graduates

201L. Animal Behavior. Survey of past developments and current controversies in animal behavior. Extensive readings, followed by individual experimental or descriptive projects in the laboratory or field (or Primate Center). Recommended background: Zoology 74L, Zoology 151L, and Mathematics 117, or equivalents. One course. *Klopfer*

204L. Community Ecology. Mechanisms that determine the distribution and abundance of plants and animals: geology, climate, physiography, soils, competition, predation, and history. Lectures focus on ecological principles. Seminars and weekend field trips. Prerequisites: an introductory ecology course and consent of instructor. C-L: Botany 267L. One course. *Christensen (Botany) and Wilbur*

206S. Controversies in Biology. A contentious theme for reading, discussion, and an individual or joint paper. Illustrative past topics: the nature of the creative process, causality in biological thought, the lack of political impact of many scientific developments. Open to nonmajors. One course. *Klopfer*

216L. Limnology. Lakes, ponds, and streams; their origin, development, geochemistry, energy balance, productivity, and the dynamics of plant and animal communities. Laboratory includes field trips. Prerequisites: introductory biology and Chemistry 12 and Mathematics 32 and physics or consent of instructor. One course. *Livingstone*

222L. Entomology. The biology of insects: diversity, development, physiology, and ecology. Field trips. Prerequisite: introductory biology. One course. *H. Nijhout*

226L. Ichthyology. Diversity, evolution, natural history, and ecology of fishes. Laboratory includes overnight field trips to marine and freshwater habitats. Prerequisites: introductory biology and Zoology 108L. One course. *Lundberg*

233. Principles of Insect Behavior. Processes governing the behavior of animals as illustrated by insects. Neural integration, communication, genetics, ecology, and evolution of individual and social behavior. Invertebrate zoology or entomology recommended. One course. *Conner and Rausher*

237L. Systematic Biology. Theory and practice of identification, species discovery, phylogeny reconstruction, classification, and nomenclature. Prerequisites: introductory biology and one course in animal or plant diversity. C-L: Botany 237L. One course. *Lundberg and Mishler*

244. Principles of Immunology. An introduction to the molecular and cellular basis of the immune response. Topics include anatomy of the lymphoid system, lymphocyte biology, antigen-antibody interactions, humoral and cellular effector mechanisms, and control of immune responses. Prerequisites: Zoology 160 and Chemistry 151 and consent of instructor. C-L: Microbiology 244. One course. *Amos and McClay*

247S. Photobiology. Effects of visible light and of ultraviolet and near ultraviolet radiation in living systems: repair processes, quantum processes, physical optics. Prerequisites: college physics and introductory biology. One course. *Fluke*

249. Biomechanics. Principles of fluid and solid mechanics applied to biological systems. Prerequisites: Physics 51 and Mathematics 31 or equivalents. One course. *Vogel and Wainwright*

259L. Laboratory in Biomechanics. Introduction to instruments used in investigations of solid and fluid biomechanics. Exercises and individual projects. Prerequisite: Zoology 249. One course. *Vogel and Wainwright*

261. Biology of Parasitism. How parasites, from viruses through vertebrates, have solved the special problems associated with their dependence on other organisms. Prerequisites: Zoology 74L and 160. One course. *M. Nijhout*

269. Advanced Cell Biology. Structural and functional organization of cells and their components with emphasis on current research problems and prospects. Prerequisite: introductory cell biology or consent of instructor. C-L: Anatomy 269, Botany 269, and Microbiology 269. One course. *McClay and staff*

283. Extrachromosomal Inheritance. Genetics, biochemistry, and molecular biology of the organelles of eukaryotic cells, and cellular symbionts. Emphasis on recent literature. Prerequisite: introductory genetics. C-L: Botany 283 and Genetics—The University Program. One course. *Boynton and Gillham*

286. Evolutionary Mechanisms. Population ecology and population genetics of plants and animals. Fitness concepts, life history evolution, mating systems, genetic divergence, and causes and maintenance of genetic diversity. Prerequisite: Zoology 74L or a course in genetics. C-L: Botany 286 and Genetics—The University Program. One course. *Antonovics, Uyenoyama, and Wilbur*

287S. Macroevolution. Evolutionary patterns and processes at and above the species level; species concepts, speciation, diversification, extinction, ontogeny and phylogeny, rates of evolution, and alternative explanations for adaptation and evolutionary trends. Prerequisite: one course in plant or animal diversity. C-L: Botany 287. One course. *Mishler and Roth*

288. Mathematical Population Genetics. Principles of formulation and analysis of dynamic mathematical models of genetic evolution. Rotating topics include: mating

systems, sex ratio, stochastic processes. Calculus required; statistics and linear algebra recommended. C-L: Genetics—The University Program. One course. *Uyenoyama*

293L. Population Biology. Theoretical approach to population genetics, life table mathematics, life-cycle evolution in plants and animals, population dynamics, and regulation. Laboratories emphasize experimental methods. Individual projects and weekend field trips. Prerequisites: calculus and ecology and consent of instructor. C-L: Botany 293L. One course. *Antonovics and Wilbur*

295S, 296S. Seminar. Topics, instructors, and course credits announced each semester. *Staff*

COURSES GIVEN AT BEAUFORT

Consult Marine Sciences in this bulletin for offerings at the Duke University Marine Laboratory, Beaufort, North Carolina, and for details of the fall, spring, and summer programs for undergraduates at Beaufort.

114L. Introduction to Biological Oceanography. Physical, chemical, and biological processes of the oceans, emphasizing special adaptations for life in the sea and factors controlling distribution and abundance of organisms. Laboratory emphasis. Not open to students who have had Geology 53 or Botany 53. Prerequisite: introductory biology. C-L: Botany 114L and Marine Sciences. One course (spring); one and one-half courses (summer). *Barber, Ramus, and staff*

150L. Physiology of Marine Animals. Environmental factors, biological rhythms, and behavioral adaptations in the comparative physiology of marine animals. Prerequisites: introductory biology and chemistry. C-L: Marine Sciences and Zoology 250L. One course. *Forward*

167. Analysis of Marine Ecosystems. Major marine ecosystems, the physical and biological characteristics of each as a functional entity. Prerequisites: Biology 14L and Chemistry 12. C-L: Botany 167 and Marine Sciences. One course. *Barber*

169L. Marine Communities. Dynamics of marine communities in the context of current ecological theory. Life history strategies, competition, predation, diversity, and stability; detailed considerations of benthic and pelagic communities. Students may not receive credit for both Zoology 103L and 169L. Prerequisites: introductory biology and Mathematics 31. C-L: Marine Sciences. One course. *Sutherland*

176L. Marine Invertebrate Zoology. Structure, functions, and development of invertebrates collected from estuarine and marine habitats. Not open to students who have had Zoology 274. Prerequisite: introductory biology. One and one-half courses. *Bookhout (emeritus staff)*

191, 192. Independent Study. For junior and senior majors with consent of Director of Undergraduate Studies and supervising instructor. Three courses of 191, 192, 193T, and 194T, maximum. Credit to be arranged. *Staff*

193T, 194T. Tutorial. For junior and senior majors with consent of Director of Undergraduate Studies and supervising instructor. Three courses of 191, 192, 193T, and 194T maximum. Credit to be arranged. *Staff*

For Advanced Undergraduates and Graduates

203L. Marine Ecology. Application of ecological theory to marine systems. Mathematical properties of population growth and species interactions; field and laboratory projects with computer-assisted analysis of data. Practice in scientific writing. Readings from current scientific publications. Prerequisites: introductory biology or

invertebrate zoology and calculus; knowledge of statistics recommended. C-L: Marine Sciences. One and one-half courses. *Sutherland*

215L. Primary Productivity in the Seas. Prerequisites: introductory biology and chemistry. See C-L: Botany 215L; also C-L: Marine Sciences. One course. *Barber and Ramus*

250L. Physiology of Marine Animals. See Zoology 150L. C-L: Marine Sciences. One course. *Forward*

274L. Marine Invertebrate Zoology. Structures, functions, and habits of invertebrate animals under natural and experimental conditions. Field trips. Not open to undergraduate students who have had Zoology 176 except by consent of Director of Undergraduate Studies. Prerequisite: introductory biology. C-L: Marine Sciences. One and one-half courses. *Barnes (visiting summer faculty)*

278L. Invertebrate Developmental Biology. Gametogenesis, fertilization, and development of invertebrates, with emphasis on experimental studies of prelarval stages. Prerequisite: consent of instructor. C-L: Marine Sciences. One and one-half courses. *McClay and visiting staff*

COURSES CURRENTLY UNSCHEDULED

252. Comparative Physiology

258L. Laboratory Research Methods

THE MAJOR

Students may obtain a copy of the *Handbook for Zoology Majors* from the office of the Director of Undergraduate Studies. The handbook describes the advising system and special programs, and gives the interests and background of the faculty. Possible areas of concentration are molecular and cellular biology, organismic biology, population biology, animal behavior, ecology, and marine sciences.

For the A.B. Degree

Prerequisite. Biology 14 or consent of Director of Undergraduate Studies.

Corequisites. Zoology 74L; Mathematics 31, and 32 or 34; Chemistry 11, 12, and 151; and Physics 51, 52.

Major Requirements. A minimum of eight courses, not including the above prerequisites and corequisites, but including at least five zoology courses; four of these must be other than independent study, tutorials, or seminars, and at least two must have related laboratory experience (not including Zoology 74L). The zoology courses must represent at least three of these five areas: genetics, cell biology, physiology, ecology, and evolution. The eight courses may include as many as three nonzoology courses taken in appropriate related departments at the 100 level or above (in chemistry, above organic chemistry), which have prior approval of the Director of Undergraduate Studies for zoology. (See *Handbook for Zoology Majors* for a listing of such courses already approved.) No one course may be used to satisfy the requirements for zoology and another major, or for a zoology major and a second or third division distributional requirement.

For the B.S. Degree

Prerequisite. Biology 14 or consent of Director of Undergraduate Studies.

Corequisites. Zoology 74L; Mathematics 31, and 32 or 34; Chemistry 11, 12, and 151; and Physics 51, 52.

Major Requirements. Same as the A.B. degree requirements except that a minimum of nine courses, not including the above prerequisites and corequisites, is required. These may include as many as four nonzoology courses taken in appropriate related departments. All other qualifications and restrictions are identical with those for the A.B. degree.

Other Major Programs

As an alternative to the above programs, a student with unusual interests in zoology may arrange a negotiated concentration of study. After appropriate discussion with departmental faculty, a student may devise a program of study which must be endorsed by two members of the faculty and approved by the undergraduate director. The statement of the proposed program must make clear why the negotiated major is more appropriate than a conventional major. Such a program must be arranged before the start of a student's fifth semester. The only formal limitation on this approach to the major is that it include at least five courses in zoology to meet the minimum Trinity College requirements. See the *Handbook for Zoology Majors* for additional details.

An interdepartmental program may be pursued instead of a departmental major. The Director of Undergraduate Studies for zoology may arrange administrative responsibility for such programs. See requirements under Biology for the major in biology.

Honors

The department offers a program for graduation with distinction in zoology. See the section on honors in this bulletin. The Director of Undergraduate Studies can provide more details.

School of Engineering

Professor Dowell, *Dean*; Professor Shepard, *Associate Dean*

ENGINEERING (INTERDEPARTMENTAL) (EGR)

11. Engineering Graphics. Graphical theory and techniques for engineering design and communication. Visualization and conventional representation of points, lines, surfaces, and objects using freehand sketches. Orthographic (including sectional and auxiliary), perspective, isometric, and oblique views. Introduction to working drawings. Elements of descriptive geometry. Half course. *Arges*

23. Principles and Practices in Engineering Economics. Introduction to the principles and practices in engineering economics. The initial set of lectures develops a general understanding of basic engineering economics and break-even analysis/minimum cost in engineering design. The second set of lectures focuses on industrial practices and public projects: interest formulas, annual and present worth, as well as taxes and depreciation. The final lectures address forecasting and uncertainty in engineering economics. Prerequisite: sophomore standing. One course. *Peirce*

24. Environmental Engineering Science. The technical fundamentals of the five major areas of environmental engineering science—water quality, air quality, noise control, solid and hazardous wastes, and professional ethics—are introduced with case studies and real-world examples. Prerequisite: Chemistry 11. One course. *Vesilind*

51. Computers in Engineering. Introduction to use of digital computers in engineering. Attributes of digital computer systems; program languages; algorithm development; numerical analysis, including approximation and interpolation, searches

and maximization, linear equations; applications to engineering; interactive computing, editing, and file handling; computer graphics. Not open to students who have completed Computer Science 51 or Engineering 52. One course. *Clemente, Medina, Melosh, Pas, or Utku*

52. Computational Methods in Engineering. Introduction to computer methods and algorithms for analysis, simulation, and optimization of engineering systems; matrix, direct, and iterative analysis techniques; finite increment techniques; linear programming. Requires prior programming experience and learning Fortran or Pascal type languages with minimal help from the course. Not open to students who have completed Computer Science 51 or Engineering 51. One course. *Melosh or Utku*

75. Mechanics of Solids. Analysis of force systems and their equilibrium as applied to engineering systems. Stresses and strains in deformable bodies; mechanical behavior of materials; applications of principles to static problems of beams, torsion members, and columns. Selected laboratory work. Prerequisites: Physics 51 and Mathematics 32. One course. *Arges, Melosh, or J. F. Wilson*

83. Structure and Properties of Solids. Introduction to materials science and engineering, emphasizing the relationships between the structure of a solid and its properties. Atomic and molecular origins of electrical, mechanical, and chemical behavior are treated in some detail for metals, alloys, polymers, ceramics, glasses, and composite materials. Prerequisites: Chemistry 11 and Mathematics 31. One course. *Cocks, Jones, Pearsall, or Shepard*

101. Thermodynamics. The principal laws of thermodynamics for open and closed systems and their application in engineering. Properties of the pure substance, relationships among properties, mixtures and reaction. Principles and applications of statistical thermodynamics. Prerequisite: Physics 52. One course. *Bejan or Harman*

123. Dynamics. Principles of dynamics of particles, rigid bodies, and selected non-rigid systems with emphasis on engineering applications. Kinematic and kinetic analysis of machine elements in a plane and in space using graphical and analytical vector techniques. Absolute and relative motion analysis. Work-energy; impact and impulse-momentum. Introduction to vibrations, wave motion, and Lagrange's equations. Prerequisites: Mathematics 103 and Engineering 75 or consent of instructor. One course. *Muga, Petroski, or J. F. Wilson*

130. Modeling and Analysis of Dynamic Systems. Mathematical modeling of mechanical, electrical, fluid, and thermal systems. Emphasis is placed on a universal approach to system analysis. Topics include: state variables, linearization methods, transfer functions and block diagrams, and feedback techniques for the control of dynamic systems. Prerequisites: Mathematics 103 and Physics 51. One course. *Buzard, Garg, or Quinlan*

135. Continuum Mechanics. The concept of continua. Vectors. Cartesian tensors. Stress, deformation, and velocity fields. Constitutive equations. Mechanical properties of solids and fluids. Simple problems in elasticity, viscoelasticity, and plasticity. Prerequisites: Mathematics 104 or 111 and Physics 51. One course. *Petroski*

151. Computer Simulations in Engineering. Simulation of various engineering systems, starting from their mathematical formulations. Simulation of the boundary value, eigenvalue, and the initial value problems. Examples from the beam-, truss-, and plate-theories, the fluid flow, the heat transfer, and the dynamics of mechanical and electrical systems. Use of widely used numerical algorithms. Identification of the problems associated with numerical simulations. Prerequisite: junior standing in engineering. One course. *Utku*

165. Special Topics in Engineering. Study arranged on special engineering topics in which the faculty have particular interest and competence as a result of research or professional activities. Prerequisite: consent of instructor(s). Quarter course, half course, or one course. *Staff*

170. Forecasting Techniques. Development of conceptual and methodological understanding of forecasting techniques and their utility in planning; formulation of mathematical and statistical models for projection; discussion of Trend Extrapolation, growth curves, Delphi method, normative methods and dynamic system modeling; technological forecasting; case studies. Prerequisites: Mathematics 111 or equivalent and consent of instructor. One course. *Garg*

174. Technology Assessment and Social Choice. Societal, economic, environmental, psychological, and ethical considerations in the design and application of technological systems; techniques for technological forecasting and assessment; citizen participation in policy making; recent case studies; interdisciplinary team project. C-L: Public Policy Studies 174 and Religion 174. One course. *Garg and McCollough*

175. Aesthetics, Design, and Culture. An examination of the role of aesthetics, both as a goal and as a tool, in a culture which is increasingly dependent on technology. Visual thinking, perceptual awareness, experiential learning, conceptual modeling, and design will be explored in terms of changes in sensory environment. Design problems will be formulated and analyzed through individual and group design projects. One course. *Pearsall*

183, 184. Projects in Engineering. Courses in which engineering projects of an interdisciplinary nature are undertaken. The projects must have engineering relevance in the sense of undertaking to meet human need through a disciplined approach under the guidance of a member of the engineering faculty. Prerequisite: consent of instructor. Two courses. *Staff*

COURSES CURRENTLY UNSCHEDULED

172A. Contemporary Science: Issues and Challenges

172B. Contemporary Technology: Issues and Challenges

187. History of Nuclear Energy: Civilian Applications

188. History of Nuclear Energy: Military Applications

Biomedical Engineering (BME)

Professor McElhaney, *Chairman*; Professors Barr, Clark, Hammond, Hochmuth, Nolte, Pilkington, Plonsey, Thurstone, von Ramm, and Wolbarsht; Associate Professors Burdick, Jaszczak, and Riederer; Assistant Professors Miller and Trahey

Biomedical engineering is the discipline in which the physical, mathematical, and engineering sciences and associated technology are applied to biology and medicine. Contributions range from modeling and simulation of physiological systems through experimental research to solutions of practical clinical problems. The undergraduate program in biomedical engineering is flexible and can satisfy the requirements for entrance into graduate work in engineering, physiology, biology, or medicine.

Opportunities for student research are available in the biomedical engineering laboratories. The department utilizes digital computers extensively, and computer science techniques are applied in acquiring, processing, and modeling biological data. Research in the biomedical materials laboratory is directed toward the development of materials suitable for use in biological environments such as the vascular system. Biomedical engineering in pediatric cardiology involves study of the electrical activity

of the heart and heart tissues in animals and humans, to increase the basic knowledge of their normal and abnormal behavior. Other electrophysiological systems are examined through the application of models and simulation techniques. The ultrasound imaging laboratories are employed for research and instruction in the biomedical application of this important technique. Ultrasound instrumentation measures and images biological tissue structures, and the laboratories are equipped with a variety of advanced ultrasonic imaging instruments. A transducer fabrication facility, test equipment for the design and construction of advanced ultrasound systems, a dedicated VAX 11/780 computer for image processing, and extensive video recording and display facilities are available. Other areas of research and instruction in medical imaging include digital angiography and NMR imaging. The biomechanics laboratory is equipped to measure biomechanical responses of tissues and organs and gait parameters, and to test protective headgear and develop new prosthetic devices. A membrane and cell biomechanics laboratory is equipped with several microscopes, electromechanical and pneumatic micromanipulators, and video systems dedicated to the study of the elastic and viscous behavior of living cells and membranes, especially normal and abnormal human red-cell membranes.

101. Electrobiology. The electrophysiology of excitable cells from a quantitative perspective. Topics include the ionic basis of action potentials, the Hodgkin-Huxley model, impulse propagation, source-field relationships, and an introduction to functional electrical stimulation. Prerequisites: Physics 52 and Electrical Engineering 61. One course. *Plonsey*

110. Introductory Biomechanics. Static and dynamic analysis of biological systems; analysis of gait and locomotion; ballistocardiography; biomechanical aspects of various sport activities, diving, and jumping; power, work, and energy concepts applied to the human body; strength and properties of tissue; and injury mechanisms and tolerance. Prerequisite: Mathematics 31. One course. *Hochmuth and McElhanev*

132. Statistical and Computational Methods in Signal Processing. Prerequisite: Biomedical Engineering 171 or Electrical Engineering 112. C-L: Electrical Engineering 132. One course. *Nolte*

132X. Statistical and Computational Methods in Signal Processing. Introduction to fundamental concepts of signal processing with particular emphasis on assessing the sensitivity of the model estimators to uncertainties in measured data. Extensive computer simulations. Prerequisite: Biomedical Engineering 171 or Electrical Engineering 112. One course. *Pilkington*

145. Chemical Thermodynamics. Thermodynamic properties and thermodynamic state. Exchange of heat and work in quasi-equilibrium processes. Chemical and phase equilibria of multicomponent mixtures. Prerequisite: junior standing. One course. *Clark and Hochmuth*

163, 164. Biomedical Electronics and Measurements. A study of the basic principles of biomedical electronics and measurements with emphasis on the operational performance and selection of transducers, instruments, and systems for biomedical data acquisition and processing. Selected laboratory work emphasizes the measurements of specific physiological events. Prerequisite: Electrical Engineering 61. Two courses. *Hanmond, Thurstone, or von Ramm*

171. Signals and Systems. Convolution, deconvolution, Fourier series, Fourier transform, sampling, and the Laplace transform. Continuous and discrete formulations with emphasis on computational and simulation aspects and selected biomedical examples. One course. *Pilkington*

191, 192. Projects in Biomedical Engineering. For seniors who express a desire for such work and who have shown aptitude for research in one area of biomedical engineering. Half course to two courses. *Staff*

201. Electrophysiology. The electrophysiology of excitable cells from a quantitative perspective. Topics include the ionic basis of action potentials, the Hodgkin-Huxley model, impulse propagation, source-field relationships, and an introduction to functional electrical stimulation. Students choose a relevant topic area for detailed study and report. Not open to students who have taken Biomedical Engineering 101 or equivalent. One course. *Plonsey*

202. Biomedical Transfer Processes. An introduction to biomedical diffusion and momentum transfer processes with particular emphasis on physical models of biological and artificial organ systems. One course. *Clark and Hochmuth*

204. Measurement and Control of Cardiac Electrical Events. Design of biomedical devices for cardiac application based on a review of theoretical and experimental results from cardiac electrophysiology. Evaluation of the underlying cardiac events using computer simulations. Examination of electrodes, amplifiers, pacemakers, and related computer apparatus. Construction of selected examples. Prerequisites: Biomedical Engineering 101 and 163 or equivalents. One course. *Barr*

205, 206. Microprocessors and Digital Instruments. Design of microcomputer-based devices including both hardware and software considerations of system design. Primary emphasis on hardware aspects, including a progression through initial design, prototype construction in the laboratory, testing of prototypes to locate and correct faults, and final design evaluation. Evaluation includes examination of complexity, reliability, and cost. Design and construction oriented toward biomedical devices or instruments that include dedicated microcomputers, usually operating in real time. Prerequisites for 205: Engineering 51 and Biomedical Engineering 163, 164 or equivalents; for 206: satisfactory work in 205. Two courses. *Barr, Hammond, and von Ramm*

211. Theoretical Electrophysiology. Mathematical analysis of intracellular and extracellular currents and voltages arising from subthreshold and transthreshold stimuli applied to excitable tissue (cardiac and striated muscle and nerve). Bases for and behavior of models of cardiac tissue utilizing discrete and continuous formulations. Evaluation of sources of extracellular fields. Description and evaluation of models of membrane behavior. Laboratory exercises based on computer simulation, with emphasis on quantitative behavior and design. Readings from original literature. Prerequisite: Biomedical Engineering 101 or 201. One course. *Plonsey and Barr*

212. Theoretical Electrocardiography. Mathematical analysis of currents flowing between the cardiac and body surfaces. Consideration of cardiac models, inhomogeneities, and surface lead systems. Examination of lead systems, and the interpretation of body surface measurements using inverse calculations. Laboratory exercises based on computer simulation with emphasis on quantitative behavior and design. Readings from original literature. Prerequisite: Biomedical Engineering 101 or 201. One course. *Barr and Plonsey*

215. Biomedical Materials and Artificial Organs. Chemical structures, processing methods, evaluation procedures, and regulations for materials used in biomedical applications. Applications include implant materials, components of ex vivo circuits, and cosmetic prostheses. Primary emphasis on polymer-based materials and on optimization of parameters of materials which determine their utility in applications such as artificial kidney membranes and artificial arteries. Prerequisite: Engineering 83 or Chemistry 151 or consent of instructor. C-L: Mechanical Engineering 215. One course. *Clark*

222. Principles of Ultrasound Imaging. Propagation, reflection, refraction, and diffraction of acoustic waves in biologic media. Topics include geometric optics, physical optics, attenuation, and image quality parameters such as signal-to-noise ratio, dynamic range, and resolution. Emphasis is placed on the design and analysis of medical ultrasound imaging systems. Prerequisites: Physics 52 and Mathematics 111. One course. *von Ramm*

230. Biomechanics. Basic elements of mechanics are developed with application in biomechanics. Primary emphasis is given to trauma mechanisms, injury criteria, and human protection. Head and neck injuries and helmet design are discussed. Case studies from product liability lawsuits with a strong biomechanics context are discussed in a seminar mode. One course. *McElhaney*

233. Modern Diagnostic Imaging Systems. The underlying concepts and instrumentation of several modern medical imaging modalities. Review of applicable linear systems theory and relevant principles of physics. Modalities studied include X-ray radiography (conventional film-screen imaging and modern electronic imaging), computerized tomography (including the theory of reconstruction), and nuclear magnetic resonance imaging. Prerequisite: consent of instructor. One course. *Riederer*

235. Acoustics and Hearing. The generation and propagation of acoustic (vibrational) waves and their reception and interpretation by the auditory system. Topics under the heading of generation and propagation include free and forced vibrations of discrete and continuous systems, resonance and damping, and the wave equation and solutions. So that students may understand the reception and interpretation of sound, the anatomy and physiology of the mammalian auditory system are presented; and the mechanics of the middle and inner ears are studied. Prerequisites: Physics 52 and Mathematics 111 or equivalents. One course. *Miller*

243. Computers in Biomedical Engineering. An in-depth study of the use of computers in biomedical applications. Hardware, software, and applications programming. Data collection, analysis, and presentation studied within application areas such as monitoring, medical records, computer-aided diagnoses, computer-aided instruction, M.D.-assistance programs, laboratory processing, wave form analysis, hospital information systems, and medical information systems. One course. *Hammond*

265. Advanced Topics in Biomedical Engineering. Advanced subjects related to programs within biomedical engineering tailored to fit the requirements of a small group. Prerequisite: consent of instructor. One course. *Staff*

COURSES CURRENTLY UNSCHEDULED

207. Experimental Mechanics

221. Electrophysiological Techniques

THE MAJOR

The major requirements are included in the minimum total of thirty-two courses listed under general requirements and departmental requirements. The following specific courses must be included: Biomedical Engineering 101, 110, 163, and 164.

Civil and Environmental Engineering (CE)

Professor Vesilind, *Chairman*; Professor Utku, *Director of Undergraduate Studies*; Professors Melosh, Muga, and J. F. Wilson; Associate Professors Biswas, Bryers, Medina, Pas, Peirce, and Petroski; Assistant Professors Arges, Marin, and Reckhow; Adjunct Professors Freeman and Saibel; Visiting Assistant Professor Clemente

Civil engineering involves the conception, design, analysis, and building of constructed facilities. Modern civil engineers may find themselves engaged in such complex problems as safety of power plants, environmental planning for a community, designing an interplanetary vehicle, or optimizing an urban transportation system. There are seven major speciality areas of civil engineering at Duke. Environmental engineering deals with the quality of human environment as affected by water supply and wastewater treatment and disposal. Geotechnical engineering is concerned with interaction between engineering structures and the earth's crust as well as with structures constructed of earth as a material. Mechanics and materials engineering is the study of the behavior of materials under various conditions of loading and environment. Ocean engineering deals with the development and use of marine resources. Structural engineering is concerned with economical and safe design of engineering structures. Urban engineering encompasses a broad spectrum of integrated technological problems such as land and city planning and development, mass transportation, and public health and safety. Water resources engineering is concerned with the usage, preservation, and replenishment of water resources. In addition, a student may elect a general program of civil engineering studies. The student may also pursue a degree with a double major in civil engineering and the policy sciences, by additionally satisfying the requirements of the Department of Public Policy Studies.

The civil engineering program at Duke is supported by several laboratories for instruction and research. The structural engineering laboratory has universal testing machines with capacities to 400,000 pounds; hardness testers; and machines for testing torsion, fatigue, and impact. The department has facilities for the construction and testing of structural models, including electronic equipment for the measurement and recording of strains and displacements. The soil mechanics laboratory includes modern testing equipment and instruments, such as static and dynamic and model testing accessories, as well as a triaxial shear apparatus, designed for testing soil and rock at confining pressures up to 100,000 pounds per square inch. The fluid mechanics laboratory equipment includes a water wave flume with paddle-type variable frequency, constant amplitude, wave generator, and a variety of sensors. The sanitary engineering laboratory is equipped for determining the characterization of waters and wastewaters and for applying biological, chemical, and physical treatment methods to improve their quality. The materials laboratory deals with the physical properties and stress-deformation characteristics of bituminous mixtures and concretes. The department has a representative collection of modern surveying equipment.

16. Surveying for Engineers. Theory and application of measurements required for planning, design, and construction of engineered facilities. Transit-tape, electronic distance measurement, and stadia surveys; differential and profile leveling; traverse computations; topographic mapping. Laboratory included. Prerequisite: Mathematics 31. Half course. *Arges*

101. Structural Engineering in Perspective. How structures work, and why they sometimes fail. An introduction to the engineering method, especially as applied to the design and analysis of civil engineering structures. Open to engineering and non-engineering students alike. Prerequisite: consent of instructor. One course. *Petroski*

116. Transportation Engineering. The role and history of transportation. Introduction to the planning and design of links, vehicles, and terminals of all transportation modes. Principles of traffic engineering and route location and design. Planning studies and economic evaluation. Prerequisites: junior or senior standing and consent of instructor for nonengineering students. One course. *Pas*

122. Fluid Mechanics. Physical properties of fluids; fluid-flow concepts and basic equations; continuity, energy, and momentum principles; dimensional analysis and

dynamic similitude; viscous effects; applications emphasizing real fluids. Selected laboratory work. Corequisite: Engineering 123. One course. *Medina or Muga*

123. Water Resources Engineering. Descriptive and quantitative hydrology, hydraulics of pressure conduits and measurement of flow, compound pipe systems, analysis of flow in pressure distribution systems, open channel flow, reservoirs and distribution system storage. Groundwater hydrology and well-hydraulics. Probability and statistics in water resources. Selected laboratory and field exercises, computer applications. Prerequisite: Civil Engineering 122. One course. *Medina or Muga*

124. Environmental Engineering. Qualitative and quantitative physical, chemical, and bacteriological characterization of water and wastewater. Introduction to water treatment processes and wastewater collection, treatment and disposal systems. Air pollution control; solid and hazardous waste management. Laboratory included. Field trips to be arranged. Prerequisite: Civil Engineering 123. One course. *Peirce or Vesilind*

127. Environmental Pollution Control. A study of the environmental causes and effects of air, land, and water pollution. Interactions between the environment and stresses to which it is subjected as a consequence of growth and concentration of populations and their increasing demands on natural resources. Solid waste, recycling, noise pollution, and environmental ethics. Not open to engineering majors. Prerequisite: junior or senior standing. One course. *Peirce or Vesilind*

131. Theory of Structures. Application of mechanics to the analysis of plane and space structures; a unified treatment of statically determinate and indeterminate structural systems. Prerequisites: Mathematics 103 and Engineering 75. One course. *Arges or Biswas*

133. Structural Design I. Nonhomogenous materials. Determination of physical and mechanical properties of construction materials. Theory and design of compression and flexural members. Emphasis on ultimate strength theory for concrete. Timber design using mechanical fasteners. Laboratory exercises include concrete aggregate evaluation, concrete mix design, and structural timber tests. Prerequisite: Civil Engineering 131. One course. *Biswas*

134. Structural Design II. Design in metals, primarily steel. Properties of materials as criteria for failure. Tension, compression, and flexural members. Bolted and welded connections, including eccentric connections. Built-up members. Design by elastic and plastic methods. Selected problems to include computations and drawings. Prerequisite: Civil Engineering 131. One course. *Biswas, Freeman, or Melosh*

139. Introduction to Soil Mechanics. Origin and composition of soils, soil structure. Flow of water through soils; capillary and osmotic phenomena. Soil behavior under stress; compressibility, shear strength. Elements of mechanics of soil masses with application to problems of bearing capacity of foundations, earth pressure on retaining walls, and stability of slopes. Laboratory included. Prerequisite: Civil Engineering 122. One course. *Clemente*

141, 142. Special Topics in Civil Engineering. Study arranged on a special topic in which the instructor has particular interest and competence. Prerequisites: consent of instructor and Director of Undergraduate Studies. Half course or one course each. *Staff*

146. Professional Engineering. General topics related to the professional practice of engineering with emphasis on economic and legal aspects. Monetary basis for engineering decisions, economic alternatives; contracts, specifications, ethics; scheduling by the Critical Path Method. Presentation of student papers on current or unique engineering topics. Prerequisite: junior or senior standing in engineering. One course. *Staff*

197, 198. Projects in Civil Engineering. These courses may be taken by junior and senior engineering students who have demonstrated aptitude for independent work. Prerequisites: consent of instructor and Director of Undergraduate Studies. Half course or one course each. *Staff*

201. Advanced Mechanics of Solids. Tensor fields and index notation. Analysis of states of stress and strain. Conservation laws and field equations. Constitutive equations for elastic, viscoelastic, and elastic-plastic solids. Formulation and solution of simple problems in elasticity, viscoelasticity, and plasticity. One course. *Petroski*

204. Plates and Shells. Differential equation and extremum formulations of linear equilibrium problems of Kirchhoffian and non-Kirchhoffian plates of isotropic and orthotropic material. Solution methods. Differential equation formulation of thin shell problems in curvilinear coordinates; membrane and bending theories; specialization for shallow shells, shells of revolution, and plates. Extremum formulation of shell problems. Solution methods. Prerequisites: Mathematics 111 and Engineering 75 or 135. One course. *Utku*

205. Elasticity. Introduction to linear theory of elasticity. Constitutive equations for anisotropic and isotropic elastic solids. Formulation and solution of torsion, bending, and flexure problems. Plane, axisymmetric, and three-dimensional problems. One course. *Petroski*

210. Intermediate Dynamics. Comprehensive treatment of space kinematics, kinetics of particles and rigid bodies; generalized coordinates and Lagrange's equations; introduction to stability, nonlinear, and random dynamic analysis of flexible, continuous systems. C-L: Mechanical Engineering 210. One course. *Dowell*

212. Mechanical Behavior of Materials. Historical perspective on structural failure. Fracture mechanics and its application to brittle and ductile fracture, and fatigue in structural materials. Analysis of load spectra; fatigue crack growth calculations. One course. *Petroski*

215. Engineering Systems Analysis. Fundamental concepts and tools for engineering systems analysis, including optimization techniques and decision analysis. System definition and model formulation, optimization by calculus, linear programming, integer programming, separable integer programming, nonlinear programming, network analysis, dynamic programming, and decision analysis. Application to diverse engineering systems. Prerequisite: senior standing. One course. *Pas*

216. Transportation Planning and Policy Analysis. Issues in policy planning and decision making in urban and rural transportation systems. Transportation legislation. Public transportation alternatives with emphasis on public transit and paratransit solutions. Corequisite: Civil Engineering 116 or consent of instructor. C-L: Public Policy Sciences 254. One course. *Pas*

217. Transportation Systems Analysis. The transportation systems planning process. Quantitative analysis; mathematical modeling and computer simulation techniques for short- and long-range planning and evaluation of transportation systems. Corequisite: Civil Engineering 116. One course. *Pas*

218. Engineering Management and Project Evaluation. Statistical analysis and economics. Data organization, distributions, estimates of parameters, hypothesis testing, analysis of variance. Economic impact assessment, supply and demand forecasting, benefit/cost analysis, economic incentives, public and private finance, input/output analysis. Fulfills advanced technical elective for mechanical engineering majors. Prerequisite: senior standing in engineering. One course. *Peirce*

225. Dynamic Engineering Hydrology. Dynamics of the occurrence, circulation, and distribution of water; hydrometeorology, geophysical fluid motions. Precipita-

tion, surface runoff and stream flow, infiltration, water losses. Hydrograph analysis, catchment characteristics, hydrologic instrumentation, and computer simulation models. Prerequisite: Civil Engineering 122. One course. *Medina or Muga*

227. Groundwater Hydrology and Contaminant Transport. Review of surface hydrology and its interaction with groundwater. The nature of porous media, hydraulic conductivity, and permeability. General hydrodynamic equations of flow in isotropic and anisotropic media. Water quality standards and contaminant transport processes: advective-dispersive equation for solute transport in saturated porous media. Analytical and numerical methods, selected computer applications. Deterministic versus stochastic models. Applications: leachate from sanitary landfills, industrial lagoons and ponds, subsurface wastewater injection, monitoring of groundwater contamination. Conjunctive surface-subsurface models. Prerequisite: Civil Engineering 123. One course. *Medina*

232. Reinforced Concrete Design. A critical review of research related to the development of existing codes. Special attention is given to the consideration of temperature change effects, shrinkage, plastic flow, bond, and shear and diagonal tension. Two-way slab and flat plate design. Prerequisite: Civil Engineering 133. One course. *Biswas*

233. Prestressed Concrete Design. A critical review of research and recent developments in prestressed concrete design. Prestressed tanks, beams, and columns; partial prestressing and composite design. Prerequisite: Civil Engineering 133. One course. *Biswas*

234. Advanced Structural Design in Metals. Design of metal structures using limit-state theory. Critical review of the basis for Load and Resistance Factor Design (LRFD) specifications. Application to bridge, building, offshore and aerospace structures. Evaluation of contemporary structural systems for planning and preliminary design. Prerequisite: Civil Engineering 134. One course. *Biswas*

235. Foundation Engineering. An introduction to methods of analysis, design, and construction of foundations. Bearing capacity and settlement of shallow and deep foundations. Soil exploration, excavation and bracing, drainage and stabilization, and underpinning. Foundation vibrations. Prerequisite: Civil Engineering 139. One course. *Clemente*

241. Environmental Engineering Chemistry and Biology. Inorganic and organic chemistry including equilibrium concepts as applied to water and wastewater treatment. Basic biology and ecology of natural, polluted, and wastewater treatment systems. Concepts of metabolism, enzyme kinetics, and growth kinetics are stressed. Occasional laboratories to illustrate analytical methods and types of organisms in the environment. Prerequisite: Engineering 24 or Civil Engineering 124. One course. *Bryers*

243. Unit Operations in Water Treatment. Fundamental bases for design of water and waste treatment systems, including transport, mixing, sedimentation and filtration, gas transfer, coagulation, and biotreatment processes. Prerequisite: Engineering 24 or Civil Engineering 124. One course. *Vesilind*

245. Pollutant Transport Systems. Distribution of pollutants in natural waters and the atmosphere; diffusive and advective transport phenomena within the natural environment and through artificial conduits and storage/treatment systems. Analytical and numerical prediction methods. Prerequisites: Civil Engineering 122 and Mathematics 111. One course. *Medina*

246. Water Supply Engineering Design. The study of water resources and municipal water requirements including reservoirs, transmission, treatment and distribution systems; methods of collection, treatment, and disposal of municipal and

industrial wastewaters. The course includes the preparation of a comprehensive engineering report encompassing all aspects of municipal water and wastewater systems. Field trips to be arranged. Prerequisite: Engineering 24 or Civil Engineering 124. One course. *Vesilind*

248. Solid Waste and Resource Recovery Engineering. Engineering design of resource recovery systems including traditional and advanced technologies. Sanitary landfills and incineration of solid wastes. Energy recovery and recycling processes. Application of systems analysis to collection of municipal refuse. Collection, treatment, and disposal of solid wastes from wastewater treatment. Prerequisite: Engineering 24 or Civil Engineering 124. One course. *Vesilind*

249. Control of Hazardous and Toxic Waste. Solutions to industrial and municipal hazardous waste management problems. Handling, transportation, processing, storage and disposal technologies. Upgrading an abandoned disposal site. Economic and regulatory aspects. Case studies. Prerequisites: senior standing in engineering or natural sciences and consent of instructor. One course. *Peirce*

251. Systematic Engineering Analysis. Mathematical formulation and numerical analysis of discrete engineering systems with emphasis on theory of structures. Equilibrium and propagation problems in continuum; properties of these systems and their discretization by the trial functions with undetermined parameters. The use of weighted residual methods, finite elements, and finite differences. One course. *Utku*

254. Applications of Finite Element Analysis. Theory of element and material models; models of metals, rock, reinforced concrete, wood, glass, soil, water, and air; analyses of torsion members, shear walls, membranes, plates, shells, solids, and compound structural systems; analysis of soil-structure and fluid-structure systems; prediction of field heating, seepage, and pollution. Prerequisite: Civil Engineering 251. One course. *Melosh*

258. Analysis of Dynamic and Nonlinear Behavior of Structures. Computation of nonlinear response by discretization; models for simulation of geometric, material, and boundary constraint nonlinearities; analysis of limit loads, bifurcations, and snap-through; simulation of super-elastic, plastic, visco-elastic, and slipping materials; prediction of collapsing, ballooning, gapping, metal forming, and welding behavior. Prerequisite: Civil Engineering 251. One course. *Melosh or Utku*

265. Advanced Topics in Civil Engineering. Opportunity for study of advanced subjects relating to programs within the civil engineering department tailored to fit the requirements of a small group. One course. *Staff*

280. Engineering Aspects of Physical Oceanography. Study of the dynamic ocean processes of concern to the design engineer. Hydrometeorology, surface wind distribution, mechanics of generation and propagation of surface water waves, theory of periodic waves (linear and nonlinear), wave spectral descriptive models, astronomical tides, storm surge, impulsively generated waves (tsunamis), and wind- and wave-induced forces on various obstructions. Attention is focused on hindcasting-forecasting techniques and selection of design (wave spectra) criteria in terms of specified risk levels. Prerequisite: senior or graduate standing in engineering or the physical sciences. One course. *Muga*

281. Experimental Systems. Formulation of experiments; Pi theorem and principles of similitude; data acquisition systems; static and dynamic measurement of displacement, force, and strain; interfacing experiments with digital computers for statistical data analysis. Students select, design, perform, and interpret laboratory-scale experiments in areas of fluid systems including environmental and ocean engineering, and in solid systems including structural and basic material behavior.

Prerequisite: senior or graduate standing in engineering or the physical sciences. One course. *J. F. Wilson*

282. Port, Harbor, and Coastal Engineering. An intensive study of the various types of marine and coastal structures and their functions. Procedures for developing preliminary design alternatives and final design selection will be illustrated via the case history approach. Structures to be considered include piers (solid and open faced), seawalls and bulkheads, breakwaters, jetties, groins, outfalls, pipelines, moored cable array systems, and floating terminals. Each case history will be followed from conception and initial planning through the design stage to construction and post-project evaluation. Normally, there will be an opportunity to participate in an ongoing project. Prerequisite: Civil Engineering 280. One course. *Muga*

283. Ocean System Dynamics. Formulation of dynamic models for discrete and continuous structures, normal mode analysis, deterministic and stochastic responses to shocks and environmental loading (earthquakes, winds, and waves), introduction to nonlinear dynamic systems, analysis and stability of structural components (beams and cables and large systems such as offshore towers, moored ships, and floating platforms). One course. *J. F. Wilson*

COURSES CURRENTLY UNSCHEDULED

202. Advanced Mechanics of Solids II

226. Operational Hydrology

236. Earth Structures

238. Rock Mechanics

239. Physical Properties of Soils

247. Air Pollution Control

THE MAJOR

The major requirements are included in the minimum total of thirty-two courses listed under the general requirements and departmental requirements. Specific courses which must be included are: Engineering 24, 51 or 52, 75, 123; Civil Engineering 122 and 131.

Electrical Engineering (EE)

Professor Casey, *Chairman*; Associate Professor Hacker, *Director of Undergraduate Studies*; Professors Fair, Joines, Kerr, Marinos, Nolte, Owen, Pilkington, Trivedi, Wang, and T. G. Wilson; Assistant Professors Carroll, Dugan, George, Massoud, and Wong; Adjunct Assistant Professors Derby, Goodwin-Johansson, Rebman, and Strole; Visiting Professor Trickey

Electrical engineering is a broadly based discipline dealing with the processing, control, and transmission of information and energy by making use of electrical and electromagnetic phenomena.

The flexibility of the electrical engineering curriculum permits students to concentrate in such areas as computer engineering and digital systems, control systems, electronic circuits and microelectronics, signal processing and communications, and electromagnetic fields and microwaves. Students may also plan a double-major program with secondary concentration in such fields as computer science, biomedical engineering, physics, mathematics, history, public policy studies, and many others. Students with interests such as premedicine, prelaw, economics, art, music, psychol-

ogy, and social systems can be accommodated within the curriculum through individually designed programs.

The various teaching and research laboratories in the department provide opportunities for laboratory and project work in areas such as electronics, digital systems, microelectronics and microprocessors, signal analysis and adaptive signal processing, power electronics, microwaves and microwave-matter interactions, and solid-state properties of materials. These laboratories are important to the undergraduate program since they permit students to become actively acquainted with the devices and techniques of modern electrical engineering through regularly scheduled experiments, independent projects, and occasionally, part-time assistance to faculty members engaged in research.

51, 52. Undergraduate Research in Electrical Engineering. An elective program in which undergraduate students participate in an ongoing program of research with electrical engineering faculty members. The research topic to be pursued by the student must be discussed with, and approved by, the faculty member who is to serve as the research supervisor prior to registration for the course. For sophomores only. Quarter course each. *Staff*

61. Introductory Circuits and Systems. Circuit principles for linear and nonlinear networks, common signal waveforms, natural and forced response of linear circuits. Circuits in the AC steady state. One-port and two-port network theorems, transfer functions, block diagrams, feedback. Semiconductor diodes, transistors, and integrated circuits. Prerequisites: Mathematics 32 and Physics 51. One course. *Staff*

62. Introductory Electronics and Energy Conversion. Amplifiers: biasing circuits, large-signal diode and transistor models, small-signal multistage and feedback amplifiers. Operational amplifiers and analog computers. Energy conversion via magnetic fields and circuits. Transformers, DC and AC machines, instrumentation, and automatic control. Prerequisite: Electrical Engineering 61. One course. *Staff*

101, 102. Undergraduate Research in Electrical Engineering. For juniors only. See Electrical Engineering 51, 52. Quarter course or half course each. *Staff*

103. Introduction to Nonlinear Network Theory. Introduction to theory and techniques for analysis and synthesis of nonlinear circuits. Characterization of 2-, 3-, and n-terminal nonlinear network elements. Laws for interconnecting elements and determining equilibrium equations. Operating points, driving-point and transfer-characteristic plots. Graphical and numerical analysis and synthesis of DC and AC nonlinear resistive functional networks. Nonautonomous first-order nonlinear networks, and autonomous second-order nonlinear networks. Some laboratory and computer simulations. Prerequisite: Electrical Engineering 61. One course. *Owen or T. G. Wilson*

112. Operational Methods in Electrical Engineering. Fourier series and transforms; spectral analysis applied to networks and modulation systems. Laplace transforms and transient response of systems; transfer functions, poles and zeros, stability. Introduction to Z-transforms and state variable models. Prerequisite: Electrical Engineering 61. One course. *Staff*

132. Statistical and Computational Methods in Signal Processing. Introduction to fundamental concepts of signal processing for both deterministic and random discrete-time signals in noise. Difference equations, sampling theorem, Z-transforms, and spectral analysis. Detection and estimation of signals in noise. Some computer simulations. Prerequisite: Biomedical Engineering 171 or Electrical Engineering 112. C-L: Biomedical Engineering 132. One course. *Nolte*

142. Thermodynamics of Electrical Processes. A study of those aspects of classical and statistical thermodynamics that are essential for an understanding of the

thermal properties of electrical materials and processes. Emphasis will be placed on the thermodynamics of metals, semiconductors, and superconductors. Prerequisites: Electrical Engineering 112 and Mathematics 104 or 111. One course. *Hacker*

143. Introduction to Electromagnetic Fields. Review of vector analysis. Introduction to Maxwell's equations. Electrostatic and magnetostatic fields and their sources. Electromagnetic power, energy, and the Poynting theorem. Prerequisites: Mathematics 104 or 111 and Physics 52. One course. *Hacker or Joines*

151, 152. Undergraduate Research in Electrical Engineering. For seniors only. See Electrical Engineering 51, 52. Quarter course or half course each. *Staff*

155, 156. Special Topics in Electrical Engineering. Study of selected topics in electrical engineering tailored to fit the requirements of a small group. Prerequisites: consent of instructor and Director of Undergraduate Studies. Half course or one course each. *Staff*

157. Introduction to Switching and Automata Theory. This course introduces techniques for the analysis and design of combinational and sequential networks. Discrete mathematical systems, elements of code theory, threshold logic, functional decomposition, minimum-complexity combinational and sequential networks, asynchronous and clocked sequential systems, iterative switching structures, Turing machines, fault diagnosis techniques. Selected laboratory work. Usually open to juniors and seniors. C-L: Computer Science 157. One course. *Carroll or Strole*

161. Electronic Circuits. Graphical and mathematical modeling of electronic devices such as diodes, and bipolar-junction and field-effect transistors; techniques for the analysis and design of electronic circuits with emphasis on large-signal and small-signal methods; applications of these methods to particular circuits, including regulators, bias-point stability, amplifiers, and switching circuits; computer simulation of electronic circuits using SPICE. Three class sessions and one computation or laboratory session. Prerequisite: Electrical Engineering 112. One course. *George or Owen*

162. Advanced Analog Electronic Circuits. Feedback and operational amplifiers: a study of feedback analysis, stability design, circuits; bipolar junction transistor and MOS operational amplifier analyses, stability techniques, noise, and other topics. Laboratory and computer simulation work. Prerequisite: Electrical Engineering 161. One course. *Derby and George*

173, 174. Projects in Electrical Engineering. A course which may be undertaken only by seniors who are enrolled in the graduation with distinction program or who show special aptitude for individual project work. Prerequisite: consent of Director of Undergraduate Studies. Elective for electrical engineering majors. Half course to two courses each. *Staff*

185. Pulse and Digital Electronics. Generation and shaping of waveforms encountered in information processing systems, such as radar, computer, control, and instrumentation systems. Typical circuit functions included are linear and nonlinear wave shaping, pulse and time-base generation, time delay, counting, and gating. Emphasis on the application of semiconductor devices to the realization of circuit functions. Three class sessions and one computation or laboratory session. Prerequisite: Electrical Engineering 161. One course. *George*

186. Introduction to Electronic Communications. Spectral analysis and sampling of analog signals. Noise sources, narrow-band noise models, noise temperature of antennas and amplifiers. Information capacity of noisy channels. Compact codes; error detecting and correcting codes. AM, FM, pulse, and digital modulation and detection systems. Pulse code detection and matched filters. Examples from commercial broadcasting and television, Bell T-carrier, deep-space telemetry, and optical fiber

communications. Prerequisites: Electrical Engineering 62 and 112 or equivalents. One course. *Kerr or Nolte*

199. Linear Control Systems. Analysis and design of feedback control systems. Block diagram and signal flow graph system models. Servomechanism characteristics, steady state errors, sensitivity to parameter variations and disturbance signals. Time domain performance specifications. Stability. Root locus, Nyquist, and Bode analysis; design of compensation circuits; closed loop frequency response determination. Introduction to time domain analysis and design. Prerequisite: Electrical Engineering 112 or consent of instructor. One course. *Kerr or T. G. Wilson*

202. Digital Communication Systems. Data communications and the transmission of information over noisy digital channels. Binary signaling via ASK, FSK, PSK. Time division multiplexing; telephone data systems; satellite television transmission. Effect of noise on coherent detection of digital signals; keying and pulse shaping techniques for reliable binary signaling; error detecting and correcting codes. Optimum digital receivers for noisy channels; error probabilities for optimum MAP receivers. Prerequisites: Electrical Engineering 186, and Mathematics 117 or 135 or Electrical Engineering 203, or permission of instructor. One course. *Kerr or Nolte*

203. Random Signals and Noise. Introduction to mathematical methods of describing and analyzing random signals and noise. Review of basic probability theory; joint, conditional, and marginal distributions; random processes. Time and ensemble averages, correlation, and power spectra. Optimum linear smoothing and predicting filters. Introduction to optimum signal detection and parameter estimation. One course. *Kerr or Nolte*

204. Computer Network Architecture. The architecture of computer communication networks and the hardware and software required to implement the protocols that define the architecture. Basic communication theory, transmission technology, private and common carrier facilities. Addressing structures and error recovery. Multivendor software compatibility. Economic tradeoffs. International standards. Prerequisites: Computer Science 154 and Electrical Engineering 157. C-L: Computer Science 204. One course. *Strole*

205. Signal Detection and Extraction Theory. Introduction to signal detection and information extraction theory from a statistical decision theory viewpoint. Subject areas covered within the context of a digital environment are decision theory, detection, and estimation of known and random signals in noise, estimation of parameters and adaptive recursive digital filtering, and decision processes with finite memory. Applications to problems in communication theory. Prerequisite: Electrical Engineering 203 or consent of instructor. One course. *Nolte*

206. Digital Signal Processing. Introduction to the fundamentals of processing signals by digital techniques with applications to practical problems. Discrete time signals and systems, elements of the Z-transform, discrete Fourier transforms, digital filter design techniques, fast Fourier transforms, and discrete random signals. One course. *Nolte*

207. Fault-Tolerant and Testable Computer Systems. Faults and failure mechanisms, test generation techniques and diagnostic program development for detection and location of faults in digital networks; design for testability, redundancy techniques, self-checking and fail-safe networks, fault-tolerant computer architectures. Prerequisite: Electrical Engineering 157 or equivalent. C-L: Computer Science 207. One course. *Marinos*

208. Digital Computer Design. Structural organization and hardware design of digital computer systems. Arithmetic unit, switching matrices, memory organization,

central processing unit (CPU), I/O unit, and microprogram control. Detailed design and simulation of a general-purpose computer system. Computer systems based on cellular structures, hardware compilers, and parallel processing architectures are also discussed. Prerequisite: Electrical Engineering 157 or consent of instructor. C-L: Computer Science 208. One course. *Marinos*

209. Microprocessor Fundamentals and Applications. Various state-of-the-art microprocessor chips and their associated instruction sets; microcomputer architectures; comparative study of various microprocessor designs; microprocessor-based system design illustrated by several carefully selected design projects. Prerequisites: Electrical Engineering 157 and consent of instructor. C-L: Computer Science 209. One course. *Carroll or George*

210. Introduction to VLSI Systems. A study of devices, circuits, fabrication technology, logic design techniques, and system architecture intended to provide the student with an understanding of the underlying physics and design techniques of VLSI systems. Students are required to complete the design of a digital subsystem in NMOS. Prerequisites: Electrical Engineering 157 and 216 or consent of instructor. One course. *Carroll*

211. Quantum Mechanics. Wave mechanics and elementary applications, free particle motion, Schrödinger equation, approximation methods. One course. *Staff*

213. Modern Optics. Optical processes including the propagation of light, coherence, interference, and diffraction. Consideration of the optical properties of solids with applications of these concepts to lasers and modern optical devices. C-L: Physics 185. One course. *Guenther or Hacker*

214. Introduction to Solid-State Physics. Discussion of solid-state phenomena including crystalline structures, thermal properties, free electron theory of metals, and band theory of semiconductors with emphasis on understanding the electrical, magnetic, and optical properties of solids. C-L: Physics 214. One course. *Hacker*

215. Semiconductor Physics. A quantitative treatment of the physical processes that underlie semiconductor device operation. Topics include band theory and conduction phenomena; equilibrium and nonequilibrium charge carrier distributions; charge generation, injection, and recombination; drift and diffusion processes. Prerequisite: Electrical Engineering 211 or consent of instructor. One course. *Hacker or Casey*

216. Devices for Integrated Circuits. Basic operating concepts of the devices that are used in integrated circuits: Schottky-barriers, ohmic contacts, p-n junctions, bipolar transistors, and Si MOS capacitors and field-effect transistors. Basic MOS logic circuits. Selected laboratory work. One course. *Casey*

218. Integrated Circuit Engineering. Basic processing techniques and layout technology for integrated circuits. Photolithography, diffusion, oxidation, ion implantation, and metallization. Design, fabrication, and testing of integrated circuits. Prerequisite: Electrical Engineering 216. One course. *Casey or Fair*

219. Digital Integrated Circuits. Analysis and design of digital integrated circuits. MOSFET and bipolar devices. SPICE models. Major logic families such as NMOS, CMOS, TTL, ECL, and I²L as well as regenerative logic circuits and memories. Circuit design considerations for LSI and VLSI. Selected laboratory exercises. Prerequisites: Electrical Engineering 157 and 216. One course. *Massoud*

224. Advanced Electronic Circuits. Application of integrated circuits in analog systems. A study of differential, operational, and other multistage amplifiers, feedback, filter design, and other topics. Some laboratory and computer simulation work. Prerequisite: Electrical Engineering 161 or equivalent. One course. *George*

225. Microwave Electronic Circuits. Microwave circuit analysis and design techniques. Properties of planar transmission lines for integrated circuits. Matrix and computer-aided methods for analysis and design of circuit components. Analysis and design of input, output, and interstage networks for microwave transistor amplifiers and oscillators. Prerequisite: Electrical Engineering 161 or equivalent. One course. *Joines*

234. Power Electronics: High-Power Circuits. Basic principles of analysis and design of electronic power control and conversion circuits with particular emphasis on thyristor (SCRs, TRIACs, etc.) circuits. Characteristics of high-power semiconductors, commutating circuits, AC voltage controllers, AC-to-AC controlled rectifiers, DC-to-DC converters, DC-to-AC inverters, AC-to-AC converters. Laboratory. Prerequisite: Electrical Engineering 161 or equivalent. One course. *Owen and T. G. Wilson*

235. Nonlinear Magnetic and Semiconductor Power Converters. Nonlinear magnetic and semiconductor switching characteristics for transient and steady-state analysis of power electronic circuits. Design of saturable and nonsaturating magnetic devices. State-plane analysis of negative-resistance oscillators and self-oscillating inverters. Laboratory. Prerequisite: Electrical Engineering 161 or equivalent. One course. *Owen and T. G. Wilson*

236. Energy-Storage Power Converters. Analysis and design of switch-mode electronic power converters utilizing energy-storage principles. Determination of large-signal and small-signal dynamic response and stability of closed-loop regulated converters. Extensive use of computer-aided analysis, and design and measurement techniques. Laboratory. Prerequisite: Electrical Engineering 161 or equivalent. One course. *Owen and T. G. Wilson*

241. Linear Systems. Modeling of multiple input-output linear systems in the frequency and time domain. Matrix differential and difference equations and their solutions; state variables. Digital simulation of differential systems. Fourier analysis of signals and systems. Transform techniques applied to state variable models. State-space models of distributed systems. One course. *Kerr or Wang*

250. Introduction to Robotics. Fundamental notions in robotics, basic configurations of manipulator arm designs, coordinate transformations, control of robot actions, robot programming, artificial intelligence; machine vision, force, touch, and other sensory systems; selected laboratory assignments. Prerequisites: Electrical Engineering 112 and consent of instructor. One course. *Wang*

251. Pattern Classification and Recognition. Parameter estimation and supervised learning, nonparametric techniques, linear discriminant functions, clustering, language theory related to pattern recognition, examples from areas such as character and severe weather recognition, classification of community health data, recognition of geometrical configurations, algorithms for recognizing low resolution touch-sensor array signatures and 3-D objects. Prerequisite: consent of instructor. One course. *Wang*

252. Computer Systems Organization. See C-L: Computer Science 252. One course. *Patrick or Trivedi*

253. Industrial Robotics. Introduction to history, current status, and prospects of robotic devices and systems. Classical task performance characteristics. Programmability, adaptability, effectiveness, economics. Applications. Laboratory and plant tours. One course. *Rebman*

265. Advanced Topics in Electrical Engineering. Opportunity for study of advanced subjects related to programs within the electrical engineering department

tailored to fit the requirements of a small group. Prerequisite: approval of Director of Undergraduate Studies and of supervising instructor. One course. *Staff*

271. Electromagnetic Theory. The classical theory of Maxwell's equations; electrostatics, magnetostatics, boundary value problems including numerical solutions, currents and their interactions, and force and energy relations. Three class sessions. Prerequisite: consent of instructor. One course. *Hacker or Joines*

272. Electromagnetic Communication Systems. Review of fundamental laws of Maxwell, Gauss, Ampere, and Faraday. Elements of waveguide propagation and antenna radiation. Analysis of antenna arrays by images. Determination of gain, loss, and noise temperature parameters for terrestrial and satellite electromagnetic communication systems. Prerequisite: Electrical Engineering 164 or 271. One course. *Joines*

273. Optical Communication Systems. Mathematical methods, physical ideas, and device concepts of optoelectronics. Maxwell's equations, and definitions of energy density and power flow. Transmission and reflection of plane waves at interfaces. Optical resonators, waveguides, fibers, and detectors are also presented. Prerequisite: Electrical Engineering 143 or equivalent. One course. *Joines*

COURSES CURRENTLY UNSCHEDULED

162. Electromechanical Energy Conversion

188. Electrical Energy Systems

217. Lasers

222. Nonlinear Analysis

226. Modeling and Computer-Aided Analysis of Electronic Systems

227. Network Synthesis

243. Advanced Linear Systems Theory

THE MAJOR

The major requirements are included in the minimum total of thirty-two courses listed under the general requirements and departmental requirements. The electrical engineering department requires the equivalent of four engineering design and eight engineering science courses. A list of the engineering design and engineering science content of all engineering courses may be obtained at the departmental office.

Mechanical Engineering and Materials Science (ME)

Professor Chaddock, *Chairman*; Professor Garg, *Director of Undergraduate Studies*; Professors Bejan, Cocks, Dowell, Gösele, Harman, Pearsall, Shaughnessy, and Shepard; Associate Professors Bliss, Loendorf, Quinlan, and D. Wright; Assistant Professors Buzzard, Knight, and Pouagare; Adjunct Professor Burton; Adjunct Associate Professor Sud; Adjunct Assistant Professor S. Wright; Research Associate Professor Jones

Mechanical engineering serves mankind as one of the fundamental professions in a modern technological society. Ranging from single components to extremely complex mechanical, hydraulic, pneumatic, or electrical systems, designs by mechanical engineers are as varied as the needs of people. Typical examples include turbines for power generation and automated factories for enhancing quality and productivity. But it is no longer adequate to consider only the obvious benefits and immediate costs; engineering solutions should encompass and respond to society's nontechnological concerns and needs as well. A modern engineering educational program must provide opportunities for students to study such disciplines as ethics, public policy, so-

ciology, and psychology, and encourage the incorporation of those concerns in engineering solutions.

Historically, the available materials have limited the technological development of any age. The development of materials with particular combinations of mechanical, chemical, and electrical properties continues as a limiting step for technological advances on almost every engineering frontier. An especially crucial area requiring the skills of materials scientists and engineers is that of energy conversion. Needs exist not only in the overall production, distribution, and use of energy itself, but also in the development of less energy-consuming processes for the production of materials.

The undergraduate curriculum in mechanical engineering and materials science provides a broad base in the basic sciences and mathematics, engineering and materials sciences, analog and digital computation, mechanical design, systems theory, and computer-aided engineering which includes computer-assisted analysis, synthesis, and manufacturing. The search for solutions to society's problems also requires an engineer to interact with other professions and disciplines; to reach out for an understanding of the economic, social, health, and political consequences of engineering decisions. Elective opportunities in the social sciences, life sciences, and humanities help fill this need.

Undergraduate laboratories provide unique learning experiences and assist in the development of professional attitudes and approaches to typical engineering problems. In the dynamics of machines laboratory, fundamentals of instrumentation and dynamic responses are introduced through simulation techniques. The materials laboratory has equipment for the synthesis and evaluation of metals, polymers, ceramics, and biomaterials. Experiments in the fluid mechanics and heat transfer laboratories relate velocity and temperature field measurements to fluid friction and heat exchange processes. In the computer-aided engineering laboratory, students learn and apply interactive computational procedures in support of geometric model definition and its graphical display. Advanced design students use the laboratory for projects which require the use of data base management concepts in support of interactive analysis and design methods.

Involvement with mechanical engineering and materials science goes beyond any specific technology, device, or system. Based on the curriculum, students experience the ways in which scientific knowledge can be utilized in the design and development of useful devices and processes. With the curriculum flexibility and the variety of course offerings, students can choose courses of study most suited to their aptitudes.

Students wishing to meet the requirements for graduation with distinction in mechanical engineering and materials science must satisfy the requirements specified in this bulletin under the section on honors. Additionally, the student must successfully complete a 200-level course in an area related generally with the central focus of the project. The 200-level course may be taken prior to, concurrent with, or subsequent to the work of the special project.

11, 12. Undergraduate Research in Mechanical Engineering. An elective program in which undergraduate students participate in an ongoing program of research with mechanical engineering faculty members. The research topic pursued by the student is arranged by mutual agreement between the student and the participating faculty member. For freshmen only. Quarter course each. *Staff*

102. Thermodynamics II. Application of the laws of thermodynamics to gas and vapor cycles. Compressor, turbine, and internal combustion engine design and performance. Refrigeration systems and analysis and applications in air conditioning. Aircraft propulsion system performance. Thermodynamics of direct energy conversion devices. Prerequisite: Engineering 101. One course. *Harman*

115. Failure Analysis and Prevention. A study and analysis of the causes of failure in engineering materials and the diagnosis of those causes. Elimination of failures through proper material selection, treatment, and use. Case histories. Examination of fracture surfaces. Laboratory investigations of different failure mechanisms. Prerequisites: Engineering 75 and 83 or consent of instructor. One course. *Jones, Cocks, Pearsall, or Shepard*

126. Fluid Mechanics. An introductory course emphasizing the application of the principles of conservation of mass, momentum, and energy to a fluid system. Physical properties of fluids, dimensional analysis and similitude, viscous effects and integral boundary layer theory, subsonic and supersonic flows, normal shock waves. Selected laboratory work. Corequisites: Engineering 101 and 123. One course. *Buzzard, Pouagare, or Shaughnessy*

140. Dynamics of Machines. Analysis of machines and mechanical devices to determine the motions resulting from applied loads as well as inputs required to produce specified motions; kinematic synthesis; study of vibrations in machinery; control of resonance, chatter, and noise. Prerequisites: Mathematics 111 and Engineering 123 and 130. One course. *Wright*

141. Mechanical Design. A study of the broad aspects of mechanical design starting with the creative process and considering the effects of economics, human factors, ethics, and prior art on design. Basic mechanical components such as gears, cams, bearings, springs, and shafts introduced in the discussions to promote familiarity with their design and application. Practice in the application of the design process through a term design project. Prerequisites: Mechanical Engineering 115 and 140. One course. *Loendorf or Wright*

150. Heat and Mass Transfer. A rigorous development of the laws of mass and energy transport as applied to a continuum. Energy transfer by conduction, in laminar and turbulent flow inside and outside of tubes, and by radiation. Application to heat exchangers, thermal power equipment, and heat transfer in the environment. Introduction to the principles of molecular diffusion and convective mass transfer. Use of the analogies between mass, momentum, and energy transfer in problem solving. Selected laboratory work. Prerequisites: Mechanical Engineering 126 and Mathematics 111. One course. *Bejan, Buzzard, or Chaddock*

153. Heating, Air Conditioning, and Refrigeration. Principles of thermodynamics, heat transfer, and fluid flow applied to comfort and industrial air conditioning. Cycles and equipment for heating, cooling, and humidity control. Air transmission and distribution. Modern vapor compression, absorption, and low temperature refrigeration cycles and systems. Prerequisite: Engineering 101. One course. *Staff*

165, 166. Special Topics in Mechanical Engineering. Study arranged on a special engineering topic in which the faculty has particular interest and competence as a result of research and professional activities. Prerequisites: consent of instructor and Director of Undergraduate Studies. Half course or one course each. *Staff*

183. Power Generation. Basic concepts of thermodynamics, heat transfer, and fluid flow applied to power generation processes. Nuclear reaction theory and reactor technology; fossil fuel combustion theory and modern boiler practice. Power plant ancillary equipment and processes. Design considerations and analyses include economic and environmental factors. One course. *Harman*

198. Projects in Mechanical Engineering. This course may be assigned by the Chairman of the department to outstanding seniors who express a desire for such work and who have shown aptitude for research in one distinct field of mechanical

engineering. Prerequisites: *B* average and senior standing. Half course to two courses.
Staff

202. Engineering Thermodynamics. General thermodynamic relationships and continuum properties of real substances. Availability and second law analysis of energy conversion processes. Low temperatures and the third law of thermodynamics. Reaction and multiphase equilibrium. Statistical thermodynamics of simple systems. One course. *Bejan or Harman*

205. Biochemical Engineering. Mathematical analysis of the effects of substrate concentration, pH, temperature, and chemical inhibitors on the rate and yield of biological processes. Enzyme kinetics. Kinetics of cell growth and metabolite production in batch and continuous culture. Design of bioreactors for microbial, mammalian, and plant cell culture. Prerequisites: Calculus and a course in microbial physiology or biochemistry. One course. *Quinlan*

206. Optimization of Bioprocess Kinetics. Concepts and mathematical modeling techniques needed to maximize the rates and yields at which cells produce biomass and metabolites. Prerequisite: Mechanical Engineering 205. One course. *Quinlan*

210. Intermediate Dynamics. Comprehensive treatment of space kinematics, kinetics of particles and rigid bodies; generalized coordinates and Lagrange's equations; introduction to stability, nonlinear, and random dynamic analysis of flexible, continuous systems. C-L: Civil Engineering 210. One course. *Dowell*

211. Theoretical and Applied Polymer Science. An advanced course in materials science and engineering dealing specifically with the structure and properties of polymers. Particular attention paid to recent developments in the processing and use of modern plastics and fibers. Product design considered in terms of polymer structures, processing techniques, and properties. One course. *Clark or Pearsall*

212. Electronic Materials. The fundamental relationships between structure and the electronic properties of materials. Emphasis on the interrelationship of solid state chemistry and the control and prediction of concomitant electronic properties. Material preparation and characterization methods. Prerequisite: Engineering 83. One course. *Gösele and Cocks*

214. Corrosion and Corrosion Control. Environmental aspects of the design and utilization of modern engineering alloys. Theory and mechanisms of corrosion, particularly in seawater and atmospheric environments. Microstructural aspects of diffusion, oxidation, hot corrosion, and stress corrosion. Prerequisite: Engineering 83. One course. *Cocks or Jones*

215. Biomedical Materials and Artificial Organs. C-L: Biomedical Engineering 215. One course. *Clark*

216. Materials Science and Solar Technology. All aspects of materials science as related to solar energy development. Emphasis is placed on photovoltaic materials and devices, including the relationship of conversion efficiency to material properties and solar cell design. One course. *Cocks*

217. Fracture of Engineering Materials. Conventional design concepts and their relationship to the occurrence of fracture. Linear elastic and general yield fracture mechanics. Microscopic plastic deformation and crack propagation. The relationship between macroscopic and microscopic aspects of fracture. Time dependent fracture. Fracture of specific materials. Prerequisites: Engineering 83 and Mechanical Engineering 115. One course. *Jones*

218. Thermodynamics and Thermokinetics of Materials. Thermodynamic and thermokinetic fundamentals and their application to materials problems such as

alloying, solid solution formation, and mass transport. Topics covered include the laws of thermodynamics, reactions and reaction rates, Gibbs and Helmholtz free energy, chemical potential, phase equilibria in semiconductor and metallic systems, behavior of solutions, phase diagrams, activation energies, and the transport equations. One course. *Cocks, Jones, Pearsall, or Shepard*

219. Applied Surface Science: Crystal Growth and Analytical Techniques. Fundamentals of surfaces processes and particle-surface interactions. Topics covered include adsorption, accommodation, elemental sticking coefficients, adatom diffusion, nucleation, thin film vapor phase growth (MBE, CVD, sputtering, etc.), and surface spectroscopies (AES, XPS, RBS, SIMS, etc.). One course. *Staff*

220. Theory and Design of Turbomachinery. One-, two-, and three-dimensional design principles for compressors, pumps, fans, and turbines from the fluid mechanics and thermodynamics point of view. Complex three-dimensional viscous flow phenomena, losses, and loss reduction in turbomachines. Dimensional analysis and performance characteristics. Student term projects consisting of the detailed three-dimensional aerothermodynamic design of compressor and turbine stages. Prerequisites: Engineering 101 and Mechanical Engineering 126. One course. *Pouagare*

221. Compressible Fluid Flow. Basic concepts of the flow of gases from the subsonic to the hypersonic regime. Effects of friction, heat transfer, and shock on one-dimensional inviscid flow. Potential theory, oblique shock waves, and special calculation techniques in two-dimensional flow. One course. *Harman, Pouagare, or Shaughnessy*

222. Heat Transfer. Analytical and numerical treatment of conduction heat transfer. Boundary layer treatment of convection heat transfer. Boiling and condensing heat transfer. Gas radiation. Selected engineering applications. Prerequisite: Mechanical Engineering 150. One course. *Buzzard or Chaddock*

224. An Introduction to Turbulence. Flow instability and the transition to turbulence. Physical characteristics of turbulent flows, averaging, and the Reynolds equation. Turbulent transport and mixing length theories. The statistical description of turbulence, correlations, and spectra. Fourier transforms. Measurement techniques. One course. *Shaughnessy*

226. Intermediate Fluid Mechanics. A survey of the principal concepts and equations of fluid mechanics. Fluid properties. Statics. Basic equations for the control volume. The differential equations of fluid motion. Stream function. Irrotational flow. Navier-Stokes equations. Kelvin's and Crocco's theorems. Applications to two-dimensional incompressible potential flow and to viscous flow in boundary layers. One course. *Shaughnessy*

227. Advanced Fluid Mechanics. Flow of a uniform incompressible viscous fluid. Exact solutions to the Navier-Stokes equation. Similarity methods. Irrotational flow theory and its applications. Elements of boundary layer theory. Prerequisite: Mechanical Engineering 226 or consent of instructor. One course. *Shaughnessy*

229. Computational Fluid Mechanics and Heat Transfer. Mathematical description of physical phenomena. Elliptic, parabolic, hyperbolic systems of partial differential equations. Choice of coordinate system, grid generation, and body fitted coordinate system. Discretization equations; control-volume formulation. Numerical solution of linear system of equations. Over-relaxation and under-relaxation methods, tridiagonal algorithm, alternative direction implicit method. Numerical solution of unsteady heat conduction and convection-diffusion equations in one, two, and three space dimensions. Solution of Navier-Stokes equations. Space-marching and time-marching methods. Student term projects consisting of the development of FOR-

TRAN programs that solve numerically fluid flow and heat transfer problems. One course. *Pouagare*

230. Modern Control and Dynamic Systems. Dynamic modeling of complex linear and nonlinear physical systems involving the storage and transfer of matter and energy. Unified treatment of active and passive mechanical, electrical, and fluid systems. State-space formulation of physical systems. Time and frequency-domain representation. Controllability and observability concepts. System response using analytical and computational techniques. Lyapunov method for system stability. Modification of system characteristics using feedback control and compensation. Emphasis on application of techniques to physical systems. One course. *Garg or Wright*

234. Advanced Computer-Aided Engineering. Advanced concepts and practices of computer-aided engineering (CAE), which includes computer-aided design and computer-aided manufacturing (CAD/CAM). Emphasis on computer graphics, engineering data management, interactive programming, and integrated analysis/design. Students will develop interactive programs that integrate the above areas. Prerequisite: programming capability in FORTRAN. One course. *Loendorf*

236. Engineering Acoustics. Fundamentals of acoustics including sound generation, propagation, reflection, absorption, and scattering. Emphasis on basic principles and analytical methods in the description of wave motion and the characterization of sound fields. Applications including topics from noise control, sound reproduction, architectural acoustics, and aerodynamic noise. Occasional classroom or laboratory demonstration. Prerequisites: Mathematics 111 and Engineering 123 or consent of instructor. One course. *Bliss*

240. Patent Technology and Law for Engineers. The use of patents as a technological data base is emphasized including information retrieval in selected engineering disciplines. Fundamentals of patent law and patent office procedures. One course. *Cocks*

241. Advanced Mechanical Design. A study of those processes in mechanical design which occur after a prototype has been developed. Areas of study may include prototype testing and evaluation, computer analysis, marketing, CAD, redesign, detail drafting, manufacturing processes for mass production, economic analysis, patents, and entrepreneurial activities. Semester projects using design teams will be used to study these areas. Prerequisite: Mechanical Engineering 141. One course. *Staff*

242. Data Base Methodology. Basic concepts and principles. Relational, hierarchical, and network approaches to data organization; data entry and query language support for data base systems; theories of data organization; security and privacy issues. Prerequisites: Computer Science 154 and either 155 or 163. C-L: Computer Science 241. One course. *Loendorf*

245. Applications in Expert Systems. A comprehensive introduction to the key practical principles, techniques, and tools being used to implement knowledge-based systems. The classic MYCIN system studied in detail to provide historic perspective. Current systems employing combinations of production rules, prototypical knowledge, and frame-based case studies. Student term projects consisting of the development of individual, unique expert systems using the Texas Instruments Personal Consultant. Knowledge of LISP not a prerequisite. One course. *Wright*

254. Solar Energy Thermal Processes. Solar radiation instrumentation, measurements, data, and estimation. Radiation heat transfer characteristics of opaque materials and partially transparent media. Performance and design calculations for

flat-plate and focusing collectors. Thermal energy storage. Solar water heating and heating and cooling of buildings. Economics and life-cycle costing studies for solar installations. Survey of research, development, and demonstration projects on solar thermal processes. One course. *Chaddock*

265. Advanced Topics in Mechanical Engineering. Opportunity for study of advanced subjects related to programs within mechanical engineering tailored to fit the requirements of a small group. Prerequisite: approval of Director of Undergraduate or Graduate Studies. One course. *Staff*

270. Robot Control and Automation. Review of kinematics and dynamics of robotic devices; mechanical considerations in design of automated systems and processes, hydraulic and pneumatic control of components and circuits; stability analysis of robots involving nonlinearities; robotic sensors and interfacing; flexible manufacturing; man-machine interaction and safety consideration. Prerequisites: Mechanical Engineering 230 or equivalent and consent of instructor. One course. *Garg*

277. Optimization Methods for Mechanical Design. Definition of optimal design. Methodology of constructing quantitative mathematical models. Nonlinear programming methods for finding "best" combination of design variables: minimizing steps, gradient methods, flexible tolerance techniques for unconstrained and constrained problems. Emphasis on computer applications and term projects. Prerequisite: consent of instructor. One course. *Wright*

COURSES CURRENTLY UNSCHEDULED

65. Introduction to Energy Technology

112. Polymer Science

156. Combustion Engines

213. Advanced Materials Science

223. Principles and Design of Heat Transfer

232. Nonlinear Analysis

235. Advanced Mechanical Vibrations

THE MAJOR

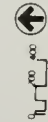
The major requirements are included in the minimum total of thirty-two courses listed under the general requirements and departmental requirements. Specific courses which must be included are Engineering 75, 83, 101, 123, and 130; Mechanical Engineering 115, 126, 140, 141, and 150.

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Duke University
1986-87

Medical Center



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1986-87

Medical Center

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The information in the bulletin applies to the academic year 1986-87 and is accurate and current, to the best of our knowledge, as of February, 1986. The University reserves the right to change programs of study, academic requirements, lecturers, teaching staffs, the announced University calendar, and other matters described in the bulletin without prior notice, in accordance with established procedures.

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School of Medicine Calendar 1986-87

First Year (Freshmen) Students

1986

August		
15	Friday, 8:30 A.M.	— Orientation
18	Monday, 8:00 A.M.	— First day of academic year, 1986-87, begin fall term
September		
1	Monday	— Labor Day holiday
November		
25	Tuesday, 12:00 noon	— Begin Thanksgiving holiday
December		
1	Monday, 8:00 A.M.	— Classes resume
19	Friday, 6:00 P.M.	— End fall term

1987

January		
5	Monday, 8:00 A.M.	— Begin spring term
March		
6	Friday, 6:00 P.M.	— Begin spring vacation
16	Monday, 8:00 A.M.	— Classes resume
June		
19	Friday, 12:00 noon	— End spring term

Second Year (Sophomore) Students

Introduction to Physical Diagnosis 1986

July		
14	Monday, 8:00 A.M.	— Begin classes
August		
30	Saturday, 12:00 noon	— End classes

Fall Term 1986

September		
2	Tuesday	— Begin classes in section 81
October		
22	Wednesday, 6:00 P.M.	— End classes in section 81
27	Monday, 8:00 A.M.	— Begin classes in section 82
November		
26	Wednesday, 6:00 P.M.	— Begin Thanksgiving holiday
December		
1	Monday, 8:00 A.M.	— Classes resume
17	Wednesday, 6:00 P.M.	— End classes in section 82

Spring Term 1987

January		
12	Monday, 8:00 A.M.	— Begin classes in section 81
March		
4	Wednesday, 6:00 P.M.	— End classes in section 81. Begin spring vacation
16	Monday, 8:00 A.M.	— Begin classes in section 82
May		
6	Wednesday, 6:00 P.M.	— End classes in section 82

Summer Term 1987

May		
11	Monday, 8:00 A.M.	— Begin classes in section 81

July	
1	Wednesday, 6:00 P.M. — End classes in section 81
6	Monday—Independence Day Holiday
7	Tuesday, 8:00 A.M. —Begin classes in section 82
August	
26	Wednesday, 6:00 P.M. — End classes in section 82

Third Year (Junior) and Fourth Year (Senior) Students

Summer Term 1986

May	
5	Monday, 8:00 A.M. —Begin classes in sections 16, 81, 41
31	Saturday, 12:00 noon— End classes in section 41
June	
2	Monday, 8:00 A.M. —Begin classes in section 42
28	Saturday, 12:00 noon— End classes in sections 81, 42
30	Monday, 8:00 A.M. —Begin classes in sections 82, 43
July	
4	Friday—Independence Day holiday
26	Saturday, 12:00 noon — End classes in section 43
28	Monday, 8:00 A.M. — Begin classes in section 44
August	
23	Saturday, 12:00 noon— End classes in sections 16, 82, 44

Fall Term 1986

September	
1	Monday—Labor Day holiday
2	Tuesday, 8:00 A.M. —Begin classes in sections 16, 81, 41
27	Saturday, 12:00 noon— End classes in section 41
29	Monday, 8:00 A.M. —Begin classes in section 42
October	
25	Saturday, 12:00 noon— End classes in sections 81, 42
27	Monday, 8:00 A.M. — Begin classes in sections 82, 43
November	
4-5	Tuesday-Wednesday—Registration for spring term 1987
22	Saturday, 12:00 noon— End classes in section 43
24	Monday, 8:00 A.M. —Begin classes in section 44
26	Wednesday, 6:00 P.M. —Begin Thanksgiving holiday
December	
1	Monday, 8:00 A.M. —Classes resume
20	Saturday, 12:00 noon— End classes in sections 16, 82, 44

Spring Term 1987

January	
12	Monday, 8:00 A.M. — Begin classes in sections 16, 81, 41
February	
7	Saturday, 12:00 noon— End classes in section 41
9	Monday, 8:00 A.M. — Begin classes in section 42
March	
7	Saturday, 12:00 noon—End classes in sections 81, 42. Begin spring vacation
16	Monday, 8:00 A.M. —Classes resume. Begin classes in sections 82, 43
17-18	Tuesday-Wednesday—Registration for summer term 1987
April	
11	Saturday, 12:00 noon— End classes in section 43
13	Monday, 8:00 A.M. —Begin classes in section 44
14-15	Tuesday-Wednesday—Registration for fall term 1987
May	
9	Saturday, 12:00 noon— End classes in sections 16, 82, 44
9-10	Saturday-Sunday—Graduation activities

Summer Term 1987

May	
11	Monday, 8:00 A.M. — Begin classes in sections 16, 81, 41
June	
6	Saturday, 12:00 noon — End classes in section 41
8	Monday, 8:00 A.M. — Begin classes in section 42
July	
3	Saturday, 12:00 noon — End classes in sections 81, 42
6	Monday — Independence Day holiday
7	Tuesday, 8:00 A.M. — Begin classes in sections 82, 43
August	
1	Saturday, 12:00 noon — End classes in section 43
3	Monday, 8:00 A.M. — Begin classes in Section 44
29	Saturday, 12:00 noon — End classes in sections 16, 82, 44



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General Information



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I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical, lines is, next to religion, the greatest civilizing influence.

I have selected hospitals as another of the principal objects of this trust because I recognize that they have become indispensable institutions, not only by way of ministering to the comfort of the sick, but in increasing the efficiency of mankind and prolonging human life. . . .

James Buchanan Duke, Indenture of The Duke Endowment, 1924

By establishing the Duke Endowment, James Buchanan Duke expressed his hope that adequate and convenient hospital care would become available to all Americans. His further bequests provided for the opening, in 1930, of the School of Medicine, School of Nursing, and hospital which today are the core institutions of the Duke University Medical Center. By opening the first major outpatient clinics in the region in 1930, Duke recognized its responsibility for providing quality care to the people of the Carolinas. The Private Diagnostic Clinic, organized in 1932, not only provided coordinated medical and surgical care to private patients with moderate incomes but also allowed members of the medical faculty to contribute a portion of their earnings toward the continued excellence of medicine at Duke. In less than five years Duke was ranked among the top 25 percent of medical schools in the country by the Association of American Medical Colleges.

Building on this heritage, the Duke University Medical Center ranks among the outstanding health care centers of the world. Its pioneering medical curriculum, instituted in 1966, features a generous measure of elective course selection in the belief that all health professionals must be prepared for a lifetime of self-education. The scientific grounding for that education is provided through participation in a wide variety of ongoing research programs. The opening of Duke Hospital North in 1980 makes the Duke Hospital, with 1,008 beds, one of the most modern patient care facilities anywhere available. The combined strength of its teaching, research, and hospital care programs represents the continuing fulfillment of the dream of James Buchanan Duke.

Over the years the Medical Center has been enlarged and its programs expanded by new construction and by the acquisition of, and affiliation with, established hospitals.

Currently the Medical Center at Duke University occupies approximately 140 acres on the West Campus. The southern quadrant is contiguous with the main quadrangle of the University and consists of the following: *Davison Building*—Department of Pathology, Central Teaching Facility, Division of Audiovisual Education, Medical Center Administration, Student Lounge, School of Medicine,

Office of Admissions, and departmental research laboratories and offices. *Duke Hospital South*—inpatient care units, in- and outpatient diagnostic, treatment and support services including operating rooms, recovery room and laboratories, positron emission tomography imaging, nursing service administration, amphitheater, chapel, private diagnostic clinics, outpatient clinics, departmental offices; *Baker House*—Departments of Medicine, Anesthesiology, Obstetrics and Gynecology, outpatient diagnostic, treatment and support services including speech and hearing, and pastoral care and counseling; *Barnes Woodhall Building*—inpatient care units, in- and outpatient diagnostic, treatment and support services including labor and delivery room and radiology, hospital administration, Department of Radiology, departmental offices; *Diagnostic and Treatment Building*—clinics, in- and outpatient diagnostic, treatment and support services, departmental research laboratories and offices; *Ewald W. Busse Building*—Center for the Study of Aging and Human Development, treatment and support services, departmental research laboratories and offices; *Eugene A. Stead Building (CR-1)*—inpatient care unit (research), departmental research laboratories and offices; *Clinical Research II*—hyperbaric medicine unit, departmental research laboratories and offices, clinical cancer research unit and the Department of Psychiatry; *Edwin A. Morris Clinical Cancer Research Building*—Inpatient care unit (research), clinics, diagnostic treatment and support services including Division of Radiation Oncology, departmental research laboratories and offices.

The northern quadrant has the following buildings: *Nanaline H. Duke Medical Sciences Building*—Departments of Biochemistry, Physiology, and Pharmacology; *Alex H. Sands Medical Sciences Building*—Department of Anatomy and basic science research programs of the Departments of Medicine, Surgery, Psychiatry, and Anesthesiology; *Edwin L. Jones Basic Cancer Research Building*—Director of Comprehensive Cancer Center, Department of Microbiology and Immunology and basic science research programs of Medicine, Surgery, Pediatrics, Obstetrics-Gynecology, Anatomy, and Pathology; *Medical Research Building*—offices and laboratories of Radiology; *Bell Building*—offices and laboratories of Medicine, Surgery, Pediatrics, Radiology, Anatomy, and Ophthalmology. It also houses Information Services, and the gross anatomy laboratories; *Seeley G. Mudd Communications Center and Library*—Medical Center Library, the Trent Collection of the History of Medicine, the Department of Public Relations, and the Searle Center for Continuing Education; *Eye Center*—inpatient care units, eye clinic, diagnostic, treatment and support services including operating rooms, recovery, Department of Ophthalmology, departmental research laboratories and offices; *Duke Hospital North*—inpatient care units, diagnostic, treatment, and support services including operating rooms and recovery, Radiology, nuclear magnetic resonance imaging (NMR), laboratories, Departments of Medicine, Surgery, Pediatrics, and Anesthesiology departmental offices.

In the western quadrant of the campus are: *Research Park Buildings I, II, III, and IV*—offices and laboratories of Medicine, Surgery, Pediatrics, Radiology, Microbiology and Immunology; *Vivarium*—Division of Laboratory Animal Resources and laboratory animal care facilities; *Animal and Laboratory Isolation Facility*—special containment facility for cancer research.

In the eastern quadrant of the campus are: *Pickens Rehabilitation Center*—general and rehabilitation outpatient clinics; Student Health Service, Employee Health Service, and Faculty Family Health Service; *Civitan Mental Retardation and Child Development Center*—offices, clinics, and laboratories of Psychiatry and Pediatrics; *Trent Drive Hall*—Health Administration and Department of Community and Family Medicine.

The goal of the Duke University Medical Center is to be a leader in contemporary medicine. This involves maintaining superiority in its four primary functions

unexcelled patient care, dedication to educational programs, national and international distinction in the quality of research, and service to the region.

Growth is identified with deeper involvement in the social aspects of health, the establishment of advanced therapeutic and research facilities, and a medical teaching program that has attracted the attention of educators around the world.

Resources for Study

Library/Communications Center. The Medical Center Library/Communications Center is located in the Seeley G. Mudd Building, midway between the north and south Medical Center campuses.

The Medical Center Library attempts to provide all informational services and collections necessary to further educational, research, and clinical activities in the medical field. The collection of approximately 211,000 volumes and 2,650 current journal subscriptions is freely available for use by Medical Center students and personnel; study accommodations for 500 readers includes extensive provisions for audiovisual learning. The library also includes the Trent Collection which is unsurpassed in the southeast as a resource for study of the history of medicine, and a branch collection of books and journals maintained in the Nana-line B. Duke Medical Sciences Building.

The Medical Center Library is open: Monday-Friday, 8:30 A.M.-midnight; Saturday, 8:30 A.M.-6:00 P.M.; Sunday, 12:00 noon-midnight. Summer and holiday hours are as announced.

Director: Warren P. Bird, M.S. (Columbia, 1964), *Associate Professor of Medical Literature*; Associate Director: Mary Ann Brown, M.A. (Peabody, 1960), *Librarian*; Curator of the Trent Collection: G.S.T. Cavanagh, B.S., B.L.S. (McGill, 1951), *Professor of Medical Literature*.

The Medical Center Bookstore offers a wide selection of biomedical textbooks and reference books, as well as an assortment of laboratory and clinical instruments and office supplies. Facilities for browsing in a pleasant atmosphere are available, as are special individualized services. The Bookstore is open: 8:30 A.M.-5:00 P.M., Monday-Friday.

Manager: Gerry Johnson

The Searle Center for Continuing Education in the Health Sciences provides accommodations for conferences, symposia, lectures and meetings to support the Continuing Education activities of the Medical Center. Provisions have been made for banquet and food service arrangements to complement the meeting facilities.

Director: Ellen Rock

The Thomas D. Kinney Central Teaching Laboratory. The Thomas D. Kinney Central Teaching Laboratory, formerly the Central Teaching Facility, is located on the fourth floor of Davison Building where it provides laboratory, demonstration, and conference space for all courses taught in the basic sciences, with the exception of gross anatomy. A full-time staff maintains a wide range of equipment and provides supplies and services necessary for the teaching programs conducted in the facility, thus enabling the academic staff of each department to devote its efforts entirely toward the students.

Six unit laboratories, each accommodating twenty students, and a twelve-person M.D.-Ph.D. candidate laboratory are devoted to instruction for the first year. All first year medical students are given space in one of these laboratories for their own work which they maintain for the entire academic year. Three small laboratories are interspersed between the six unit laboratories and provide space for large pieces of equipment used in conjunction with exercises conducted in the unit laboratories. Space is also provided for small laboratory projects. Three large multipurpose laboratories can accommodate forty or more students each for a large variety of teaching exercises. Other areas include demonstration and conference rooms and a microscopy laboratory for advanced courses offered during the third year.

The Central Teaching Laboratory also provides resources for allied health programs and a microscope cleaning service. Five large conference rooms in Duke South and twelve conference rooms in Duke North are scheduled through this office, providing additional teaching space for groups of 16 to 225 persons when necessary.

Manager: Carol G. Reilly, B.S.

Division of Audiovisual Education. The Division of Audiovisual Education serves the Medical Center by providing all types of audiovisual support materials to assist the faculty. There are three sections: Medical Art, Medical Photography, and Central Television.

The Medical Art Section provides illustrations produced by various art methods and techniques. Services rendered are surgical and anatomic drawings, schematic and mechanical drawings, diagrams, charts, graphs, designs, lettering, calligraphy, signs, and poster exhibits, as well as other forms of illustrations. Computer generated graphics is the newest service from the Art section.

The Medical Photography Facility is staffed and equipped to provide a full range of photographic services for patient care, teaching, and research. Patient photography activity includes black and white and color photos in the studio, on the ward, in the clinic, or in the operating room. Copy photography includes a full range of slide services for internal and external lecture and presentation purposes. Black and white and color prints for publication, display and poster session purposes are also available. Other services include daily processing of Ektachrome film, location photography, and passport and application prints.

Central Television also supports teaching, research, and patient-care programs of the Medical Center. The three-fourths inch U-matic and one-half inch VHS video formats are used for color recording of patient education programs, lecture presentations, and surgical procedures as part of staff professional education. Motion pictures in color and with sound are also produced. Audiotape services, projectionists, and projectors are available.

Director: Thomas P. Hurtgen, M.B.A. Duke Hospital.

Duke Hospital. Duke Hospital, one of the largest private hospitals in the south, is part of the Medical Center and currently has 1,008 beds. The hospital directs its efforts toward the three goals of expert patient care, professional education, and service to the community. It offers patients modern comprehensive diagnostic and treatment facilities and special acute care and intensive nursing units for seriously ill patients. More than 32,000 patients are admitted annually. Surgical facilities include thirty-two operating rooms in which surgeons perform more than 18,000 operative procedures annually. Approximately 1,800 babies are born each year in the delivery suite. Other special facilities for patients include a heart catheterization laboratory, hemodialysis unit, cancer research unit, pulmonary care unit, hyperbaric oxygenation chamber, and cardiac care unit.

Close working relationships with private and governmental health and welfare agencies provide opportunities for continued care of patients after they leave Duke Hospital.

Ambulatory services include the nonprivate outpatient clinics, private diagnostic clinics, the employee health service, and the emergency department, with annual total patient visits of over 400,000. The clinical faculty of the Duke University School of Medicine participate in undergraduate and graduate medical education and practice medicine in the hospital and in private diagnostic clinics.

Duke Hospital, with a house staff of approximately 755, is approved for internship and residency training by the Council on Medical Education and Hospitals of the American Medical Association and is fully accredited by the Joint Commission on Accreditation of Hospitals.

Veterans Administration Medical Center. The Durham Veterans Administration Medical Center, with 489 beds, annually admits over 7,000 patients. The hospital is within walking distance from the School of Medicine and has closely integrated teaching and training programs for medical students and house staff. These programs are provided by the full-time professional staff who are members of the faculty of Duke University School of Medicine.

Sea Level Hospital. Sea Level Hospital in Carteret County, North Carolina, became part of Duke University Medical Center in 1969 as a result of a gift by D. E. Taylor and family of West Palm Beach, Florida. The seventy-two-bed community hospital retains its professional and administrative staff, with representatives of the Medical Center serving in an advisory capacity. It provides an opportunity for medical students to obtain experience in the practice of medicine in a small community.

Lenox Baker Children's Hospital. The Lenox Baker Children's Hospital, with forty beds, is a residential rehabilitation center for children with neuromuscular and skeletal diseases, primarily cerebral palsy. Although it is a state institution, physicians on the faculty of the Duke University Medical Center conduct interdepartmental teaching and training programs for house staff, medical students, and the Lenox Baker Children's Hospital staff.

Durham County General Hospital. Durham County General Hospital is a county owned, 483-bed, general, short-term care community facility serving the residents of Durham County. This institution participates in many of the medical and health-related professional training experiences.

Other Hospitals. Various cooperative teaching and training programs are available for medical and allied health professional students and house staff at other hospitals including McPherson Hospital in Durham, Asheville Veterans Administration Medical Center in Buncombe County, Murdoch Center for Retarded Children and John Umstead Hospital in Butner, Dorothea Dix Hospital in Raleigh, and Cabarrus Memorial Hospital in Concord, North Carolina.

Program Information



The Medical Curriculum

In recent years, analysis and appraisal of medical curricula have resulted in changes in many medical schools. Several factors have required these changes. Important among them are the increasing scope and complexity of medicine generally and the dissatisfaction with the sharp cleavage between basic science and clinical years. As a result of long study, the Duke University School of Medicine instituted a major revision of the curriculum, beginning with the class which entered in the fall of 1966.

The aims of the present curriculum are: (1) to provide a strong academic basis for a lifetime of growth within the profession of medicine, with the development of technical competence, proficiency, and the proper attitudes peculiar to the practice of medicine as well as an appreciation of the broader social and service responsibilities; (2) to establish for the first year a basic science program which will fulfill the purposes of the increasingly heterogeneous student body; (3) to offer both clinical and basic science education simultaneously; (4) to permit the student to explore personal intellectual preferences and capabilities; (5) to allow in-depth study in selected areas, either clinical or basic science; (6) to provide greater freedom of course selection and thus to encourage earlier career decision; and (7) to achieve better integration of the medical school curriculum with residency training and the practice of medicine.

The curriculum, while offering a previously unattainable degree of flexibility to medical education and new opportunities for intellectual exploration, also makes heavy demands upon the student. It should be recognized that medical students at the Duke University School of Medicine are expected to maintain a consistent level of performance and to demonstrate qualities of initiative and dedication to their chosen profession. A scholarly attitude toward medicine that will continue throughout an entire career is an important objective of the Medical School. The foundations of this attitude to learning should accompany the student upon entering.

Students are expected to maintain at all times a professional attitude toward patients, to respect confidences, and to recognize that they are the recipients of privileged information only to be discussed within the context of scholarship and in circumstances that truly contribute to the educational process or to the care of the patient. This attitude involves consideration not only of speech and personal appearance but *also of morality, honor, and integrity.*

Doctor of Medicine Degree

The degree of Doctor of Medicine is awarded, upon approval by the faculty of Duke University, to those students who have completed the curriculum of the School of Medicine and have demonstrated their fitness to practice medicine by adherence to a high standard of ethical behavior and morality. Only those who have paid or made satisfactory arrangements to pay all indebtedness to the University will be awarded their degrees.

Course Requirements—First Year. The student will study the principles of all the basic science disciplines. Rather than mastering an encyclopedic array of facts, the purpose will be to acquire familiarity with the major principles of each subject. The year will be divided into two terms of instruction as follows:

Semester 1	Credit
Gross Anatomy	3
Microanatomy	3
Neuroanatomy	2
Biochemistry	5
Medical Physiology	4
Neurophysiology	2
Genetics	1
	<hr/>
	20
Semester 2	Credit
Pathology	5
Microbiology	5
Pharmacology	4
Human Behavior	2
Immunology	1
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	17

Following the first year, there is a mandatory vacation before beginning the Introduction to Clinical Diagnosis course during the third week of July. Every class has Labor day, Thanksgiving, Christmas, and spring break with the exact dates depending upon rotation and class schedules. Each class also has the possibility of summer vacation after each academic year.

Course Requirements—Second Year. Satisfactory completion of the first year curriculum is a prerequisite to the second year curriculum. The second year will provide an exposure to clinical science disciplines, which permits students early in their careers to become participants in the care of patients. The acquired appreciation of the problems of the clinical areas and the opportunities to recognize the applications of the basic sciences should lead to a more meaningful selection of courses for the subsequent two years.

The Introduction to Clinical Diagnosis course, which occupies the seven weeks preceding the core clinical rotations, is followed by eight-week rotations in internal medicine, surgery, obstetrics/gynecology, pediatrics, and psychiatry, and either an eight-week rotation in family medicine or a four-week rotation in family medicine and a four-week rotation in neurology.

Course Requirements—Third and Fourth Years. Satisfactory completion of the second year curriculum is a prerequisite to the elective curriculum. These two years will be made up of elective courses, selected by the student within requisite limitations. Each student will choose professional advisers from the preclinical and clinical faculties to assist in formulating the program for the third and fourth years. Half of the time must be devoted to basic science and half to clinical science.



Recipients of a Ph.D. degree in a basic science subject or completion of one of the special study programs may fulfill the requirements for basic science. Specific prerequisites for elective courses may be required.

The elective courses of study offered are described under each department. The wide selection affords an opportunity for students to design programs to best satisfy their needs, with guidance from their advisers. Thirty-six credits in each elective curriculum, i.e., basic science and clinical science, are required for graduation.

As an alternative after completion of the second year, the student may enroll as a Ph.D. candidate in one of the basic sciences, earning this degree in two or three years. Then, having completed three of the four years necessary for a Doctor of Medicine degree, the student may earn that degree by completing a fourth clinical year.

The third and fourth years will be divided into four terms of sixteen weeks each. Certain courses as noted will be offered during the summer term.

Promotion. Where appropriate, certification by the individual faculty person or by the delegated representative of each departmental Chairman that a student has satisfactorily completed requirements for a course shall constitute grounds for a grade of "passing" or a grade of "passing with honors." "Passing with honors" is reserved for those students who have performed in an extraordinary manner in the opinion of the faculty.

An "incomplete" grade shall be reserved for those students who have not met all of the requirements because of illness or other such extenuating circumstances. "Incompletes" that are not satisfied within one calendar year automatically become

"failures." It is the departmental chairman's responsibility or that of the delegated representative of the departmental Chairman to certify that an "incomplete" has been satisfied and to so notify the Registrar and Dean for Undergraduate Medical Education. A "passing grade" shall be placed alongside an "incomplete" on the permanent and official transcript. All first year courses must be satisfactorily completed before a student may enroll in second year courses. All second year courses must be satisfactorily completed before a student may enroll in the elective curriculum.

A "fail" grade is recorded on the permanent record of a student by the Registrar upon certification by the individual faculty person or the delegated representative of the departmental chairman that unsatisfactory work has been done in the opinion of the faculty. Failures cannot be erased from the permanent record but the requirements of the course may be satisfied by repeating the course in a satisfactory manner at which time a passing grade is placed alongside the grade of "fail" on the official and permanent transcript.

Each student's record will be reviewed periodically by promotions committees composed of the departmental chairmen or their designees. There will be two such committees: one for basic science and one for clinical science. Recommendations by these committees will be made to the Dean of Undergraduate Medical Education who may follow one of several options:

1. Promote students whose work is satisfactory;
2. Warn students whose work is less than satisfactory that they must improve their scholastic endeavor;
3. Place on probation students whose work is unsatisfactory; or
4. Request the resignation of any student who is considered an unpromising candidate for the degree of Doctor of Medicine.

A student wishing to appeal a decision may do so to the Dean of Undergraduate Medical Education within two weeks of notification.

The Dean of Undergraduate Medical Education, with the advice of the Medical School Advisory Committee, reserves the right to require the withdrawal of any student at any time if, in his opinion, the student should not continue in the School of Medicine.

Satisfactory Progress. Satisfactory progress for students in the School of Medicine shall be construed as the successful completion of all requirements necessary for the advancement from one year to the next. These requirements are as follows:

First to Second Year. Completion of core basic science courses in one calendar year.

Second to Third Year. Completion of core clinical science courses within fourteen months.

Third to Fourth Year. Completion of 36 elective course credits within one calendar year.

Fourth Year to Graduation. Completion of an additional 36 elective credits within one calendar year.

Leave of Absence. With the approval of the Dean or Associate Deans of Undergraduate Medical Education, or the Assistant Dean for Medical Student Affairs, a student may be granted an official leave of absence for two or more consecutive terms but not to exceed one calendar year. In the following circumstances a student must request a leave of absence: a freshman who will not be enrolled for the entire first year; a sophomore who will not be enrolled during an entire term and, thereby, not complete the core clinical science courses within fourteen months; and a third or fourth year student who will not be enrolled for consecutive terms in the fall, spring, and/or summer.

A student who does not enroll for a period longer than one year must seek readmission by application to the Medical School Admissions Committee.

Visiting Students. The School of Medicine provides opportunities for visiting students to enroll in elective courses for a maximum period of eight weeks. The School of Medicine does not offer long term or extensive clinical experience (sometimes called externships or clerkships) sufficient to satisfy the clinical educational requirements of foreign medical schools. For information write to: Undergraduate Medical Education, Box 3005, Duke University Medical Center, Durham, North Carolina 27710.

Combined Degree Programs

Medical Scientist Training Program. The Medical Scientist Training Program is designed for highly qualified students strongly motivated toward a career in medical sciences and academic medicine. It provides an opportunity to integrate graduate education in one of the sciences basic to medicine with the full clinical curriculum of the School of Medicine. The program requires, on the average, six to seven years of study and leads to both the M.D. and Ph.D. degrees. Although the special emphasis of this program is on basic medical science, the trainees, because of their education in clinical medicine, have a remarkable range of career opportunities open to them. Graduates of this program follow one of two broad paths. Some embark directly on careers in teaching and research in one of the basic medical sciences, while maintaining strong ties with clinical science as a result of their combined training. Others enter residency programs before pursuing investigative and teaching careers in clinical medicine, carrying with them strong academic backgrounds which allow them to conduct fundamental research with a foundation of superior training and experience in basic sciences.

Eligibility. Applicants must meet the admission requirements of both the Medical School as a candidate for the M.D. degree, and the Graduate School as a candidate for the Ph.D. degree. Most candidates apply for admission to the first year of the program, but in special cases applications can be accepted from students who are in residence in the Medical School or Graduate School of Duke University. In addition to the minimum requirements for acceptance to the Medical School and the Graduate School, advanced course work in science and mathematics and prior research experience (or other evidence of research aptitude) will count heavily in the selection of candidates.

Financial Support. Students admitted to the first year of the program will receive a traineeship award, consisting of a stipend and full tuition allowance, provided by a National Research Service Award from the National Institutes of Health. Currently the annual stipend, defined by NIH policy, is \$6,552, and financial support from that award can be furnished for up to six years, assuming normal progress. These six years need not be consecutive; this permits flexibility in funding in case more than six years are required for completion of the curriculum. Funding by the NIH is limited to citizens or permanent residents of the United States.

The Training Program. This program has been designed to offer trainees great latitude in the selection of course material. Basic requirements are two academic years composed of the first basic science year and the second clinical science year of the curriculum for medical students at Duke University. Following completion of the second year, the trainee enters the graduate program to complete the requirements for the Ph.D. degree. One more academic year of elective clinical study is necessary to complete the requirements for the M.D. degree. Both degrees are awarded at the completion of this sequence. Minor variations in this schedule can be arranged if this is advantageous to the student's education.



Year 1—Core Basic Science Year. This year consists of courses in anatomy, biochemistry, genetics, microbiology, pathology, pharmacology, and physiology. Year 2—Core Clinical Science Year. This year encompasses a comprehensive approach to medicine oriented to the patient as a whole. The year provides fundamental training in clinical medicine, with emphasis on the relationships between general biological processes, from conception through birth, development, and maturation to senescence and death, as well as individual clinical states. Special consideration is devoted to the pattern of developmental sequences and to the changes in that pattern determined by genetic composition and the particular environment in which the patient lives.

During the second year, the trainee is taught primarily by teacher-investigators from the clinical departments. The Introduction to Clinical Diagnosis course occupies the six weeks preceding the core clinical rotations. The balance of the second year consists of equal eight-week rotations. These rotations are offered in internal medicine, surgery, obstetrics/gynecology, pediatrics, psychiatry, and family medicine. Second year students are given the freedom to choose five of these six rotations. The sixth rotation may be taken without additional tuition if the student so chooses or it may be omitted entirely.

Years 3, 4, 5, (6)—The Graduate Years. During the third, fourth, and fifth and, if necessary, sixth year of the program, the trainee pursues graduate study to satisfy the requirements for the Ph.D. degree. These requirements include: (1) completion of necessary course work, (2) adequate performance in the preliminary examination, (3) original research suitable for a dissertation, and (4) successful defense of the thesis in the final examination. Detailed description of the other general requirements for the Ph.D. degree are stated in the *Bulletin of the Graduate School*.

The graduate curriculum of each trainee is developed in consultation with the director of graduate studies of the department in which the trainee elects to study and requires the approval of the Medical Scientist Training Program Com-

mittee. Since most of the ordering ideas and experimental techniques of all the medical sciences derive from mathematics and the physical sciences, it is essential to ensure that all students in the program have an adequate foundation in these subjects. Because of the close working relationship and geographical proximity of the departments of medical and physical sciences at Duke, the setting is unusually favorable for the achievement of that goal.

Descriptions of the graduate courses in the Departments of Anatomy, Pathology, Microbiology, Biochemistry, Genetics, Physiology, Pharmacology, Biomedical Engineering, and Computer Science are listed in the *Bulletin of the Graduate School*. Trainees are encouraged to select courses which relate to their developing individual interests rather than follow a prescribed curriculum applied to all students in a given discipline. Such range, flexibility, and freedom are the essence of graduate education. The original research and dissertation of each trainee is supervised by a faculty adviser chosen by the trainee in consultation with the Director of Graduate Studies in the appropriate department. The faculty adviser is the chairman of the trainee's supervisory committee, which consists of at least three members from the major department. This committee generally administers the preliminary examination before the student commences original research and the final examination after the student completes the dissertation.

Final Year—An Elective Year in Clinical Science. In this year, which is entered only after completion of all requirements for the Ph.D. degree, a faculty adviser from the clinical discipline in which the student is most interested is assigned. The student and the adviser construct an individualized curriculum, which often places major emphasis on one clinical area and minor emphasis on other fields. One aim is the integration of research interests and clinical experience in such a way that the student's research competence will be facilitated; therefore, this year is planned with regard to the trainee's proposed career in research as well. This elective year provides further training in clinical medicine to complement the second or core clinical year, so that the trainee's total clinical experience is the same as that given in the regular clinical years of medical school (the third and fourth years in the majority of schools). It should be noted that since students in the program receive the M.D. degree upon completion of this final year, great care is taken by the faculty to ensure that students are competent and knowledgeable in current concepts of patient care. It is hoped that the final year will provide the student with an experience which is not repeated during the residency but will serve to complement later phases of training. Thus, future surgeons might be exposed to fields other than surgery, since they will receive intensive training in that discipline during their residency programs.

Application and Admission Procedure. The following guidelines should be observed by individuals applying to the Medical Scientist Training Program.

1. The application form for the Duke University School of Medicine should be completed and submitted as early as possible, since acceptance into the Medical Scientist Training Program requires acceptance by both the Program Committee and the Medical School Admissions Committee. Applicants who cannot be accepted into the program are still fully eligible for acceptance to the medical school if the Medical School Admissions Committee considers them qualified and desirable.
2. The application form for the Medical Scientist Training Program should be completed and submitted with the application to the School of Medicine. *To ensure full consideration by the Program Selection Committee, this application should be mailed no later than 15 December.*
3. To facilitate review of this application, the Medical College Admission Test should be taken, if possible, in May of the year in which the application is submitted.

4. Only those applicants who are accepted for the program are requested to complete an application form for the Graduate School. The Graduate Record Examination is not required for this purpose.
5. Applicants are notified about acceptance into the program on or about 15 February.

Additional information may be obtained by writing Henry Kamin, Ph.D., Professor of Biochemistry and Associate Director, Medical Scientist Training Program, Department of Biochemistry, Duke University Medical Center, Durham, North Carolina 27710.

The Medical Historian Program. The Medical Historian Program is conducted under the auspices of the School of Medicine and the Graduate School. Two courses are offered: a combined M.D.-Ph.D. (extending over six years) and a M.D.-M.A. (four or five years depending on use of summer sessions). The choice of Ph.D. or M.A. depends on the career goals of the student. Those wishing to put a major effort into scholarly activities in the history of medicine will generally be advised to undertake the Ph.D.

The basic requirements for both courses are two academic years in the School of Medicine consisting of core basic sciences in the first year and core clinical rotations in the second year. The student then enters the Department of History. A range of appropriate courses are available. Following the completion of the Ph.D. or M.A., the student resumes requirements for the M.D. degree.

Application and Admissions Procedures. Applicants must meet the requirements for admission to the School of Medicine and the Graduate School in the Department of History. Candidates who have completed two years of medical school will also be considered. In addition to the minimum requirements established by the School of Medicine and the Graduate School, courses in history and in the history and philosophy of science will count in the selection of candidates.

Applicants should complete and submit an application form to the Duke University School of Medicine and to the Graduate School for admission to the Department of History.

Additional information may be obtained by writing to: Peter C. English, M.D., Ph.D. Box 3420, Duke University Medical Center, Durham, North Carolina 27710.

The Medicine and Public Policy Program. This program, which normally requires a maximum of five years to complete, is offered to meet the growing demand for persons who combine medical skills and training with a capacity for analytic public decision-making. It aims at training those persons with requisite talent to be leaders in the development and implementation of health policy at all levels of government. Such leadership might be provided as an elected or career public official, as a leader of medical professional organizations, or as a practicing physician or medical scholar active in public affairs.

Utilizing the faculty and resources of the School of Medicine and the Institute of Policy Sciences and Public Affairs, the program offers students a multidisciplinary education that aims at providing:

1. A complete course of study in basic medical sciences and clinical training in the practice of medicine identical in scope and rigor with the education received by students enrolled in the Doctor of Medicine program alone;
2. Familiarity with the organization and financing of health services, with particular focus on the economics and politics of health care;
3. An understanding of the political, bureaucratic, and social processes that define public problems and limit alternative approaches to their solutions;
4. A capacity for quantitative and logical methods of analysis useful in forecasting and appraising policy consequences and in evaluating existing policies;

5. An understanding of the uses and limitations of various analytic techniques and an awareness of the value considerations and ethical choices implicit in particular policy alternatives.

During the first two years at Duke, students enroll in the normal course of study in the School of Medicine. In the third year, course work shifts primarily to the Institute. In the fourth year, students do most of their work in the School of Medicine and complete a client-oriented study of a particular problem in health policy. During the fifth year, students complete their requirements in the School of Medicine, at the completion of which they receive both the M.D. and A.M. in public policy sciences degrees.

Admissions. Students may apply for admission to the program in medicine and policy sciences concurrent with application to the School of Medicine or during their first or second years.

Applications. Requests for applications and specific questions about the program should be addressed to the Director of Graduate Studies, Institute of Policy Sciences and Public Affairs, P.O. Box 4875, Duke Station, Durham, North Carolina 27706.

The M.D.-J.D. Program. The School of Medicine and the School of Law of Duke University jointly sponsor a program of combined medical and legal education. The program provides an opportunity to acquire a full basic study of the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.D. and the J.D. degrees.

Course of Study. The student in the M.D.-J.D. Program begins a six-year course of study in the School of Medicine. As in the regular M.D. Program, the first year is devoted to the basic medical sciences and the second year to the basic clinical disciplines. At this point the student enters the School of Law, where the first-year curriculum is the same as that of other law students. During the next two years the student takes approximately one and one-half semesters in the law curriculum, including available health law courses, and then may apply up to twelve additional hours of medical school courses toward the law degree. The sixth and final year is spent in elective clinical work in the Medical School tailored to the student's specialized needs. In addition, the student completes eighteen semester hours, or two summer sessions, of elective basic science work.

Eligibility. Applicants for the M.D.-J.D. Program must qualify for admission to both the School of Medicine and the School of Law. The usual approach is to apply for both schools simultaneously, thus reserving a place in the program prior to arrival. Applications are also accepted from members of the first and second year medical school class for admission to the School of Law and from the third year law school class for admission to the School of Medicine.

Application Procedure. Application forms for the School of Law may be obtained by writing to the Office of Admissions, Duke University School of Law, Durham, North Carolina 27706. Applications for the School of Medicine shall be made by utilizing the AMCAS procedure described in this bulletin.

Deadlines. For those seeking simultaneous admission to both schools: at the end of the junior year take the new Medical College Admissions Test (MCAT) and the Law School Aptitude Test (LSAT).

For the Medical School complete the AMCAS application procedures and upon receipt of the supplemental application form from Duke, check the box indicating MD-JD Program. Deadline for AMCAS procedure is November 1. There is no deadline for the Law School but January or earlier submission is suggested.

The M.D.-M.P.H. Program. Students enrolled in the School of Medicine, after satisfactory completion of the first two years of the regular curriculum, may request approval to seek a Master of Public Health degree at the University of

North Carolina, Chapel Hill, or at another approved institution. The program is designed to train physicians in epidemiology, biostatistics, environmental and occupational health, and in planning, administering, and evaluating health care delivery systems. Upon receipt of the M.P.H. degree, students are awarded one half year (18 units) of elective credit toward the M.D. degree. This credit award, to be made by the Dean for Undergraduate Medical Education, may be prorated between clinical and basic elective units depending upon the course of study pursued by the student.

For additional information, interested students should contact George R. Parkerson, Jr., M.D., M.P.H., Department of Community and Family Medicine, Duke University School of Medicine, Durham, North Carolina 27710.

Commencement. Graduation exercises are held once a year, in May, when degrees are conferred on, and diplomas are issued to, those who have completed requirements by the end of the spring semester. Those who complete degree requirements at the end of the fall or summer terms receive diplomas dated 30 December or 1 September, respectively. There is a delay of about one month in the mailing of September and December diplomas because diplomas cannot be issued until they are approved by the Academic Council and the Board of Trustees.

Postgraduate Education

Residencies. Appointments are from 1 July through 30 June with few exceptions. Residents receive stipends, professional liability insurance, disability insurance, life insurance, uniforms, and laundry of uniforms.

Residencies offered with the chairman or chief of each service are as follows:

Anesthesiology	(Chm.) David Watkins, M.D., Ph.D.
Family Medicine	(Dir.) Harvey Estes, M.D.
Internal Medicine	(Chm.) Joseph Greenfield, M.D.
Dermatology	(Chf.) Sheldon Pinnell, M.D.
Neurology	(Chf.) Allen Roses, M.D.
Obstetrics and Gynecology	(Chm.) Charles Hammond, M.D.
Ophthalmology	(Chm.) Robert Machemer, M.D.
Pathology	(Chm.) Robert Jennings, M.D.
Pediatrics	(Chm.) Samuel L. Katz, M.D.
Pediatric Allergy	(Chf.) Rebecca Buckley, M.D.
Pediatric Cardiology	(Chf.) Page Anderson, M.D.
Psychiatry	(Chm.) Bernard Carroll, B.M., B.S., Ph.D.
Radiology	(Chm.) Carl Ravin, M.D.
Imaging	(Chf.) Carl Ravin, M.D.
Nuclear Medicine	(Chf.) R. Edward Coleman, M.D.
Radiology Oncology	(Chf.) Leonard Prosnitz, M.D.
Surgery	(Chm.) David C. Sabiston, Jr., M.D.
General Surgery	(Chf.) William G. Shingleton, M.D.
Neurosurgery	(Chf.) Robert H. Wilkins, M.D.
Oral Surgery	(Chf.) John Angelillo, D.D.S., M.D.
Orthopaedic Surgery	(Chf.) James R. Urbaniak, M.D.
Otolaryngology	(Chf.) William R. Hudson, M.D.
Plastic Surgery	(Chf.) Donald J. Serafin, M.D.
Thoracic Surgery	(Chf.) David C. Sabiston, Jr., M.D.
Urologic Surgery	(Chf.) David F. Paulson, M.D.

Duke University Medical Center is a participating member of the National Resident Matching Program, One American Plaza, Suite 807, Evanston, Illinois 60201, and all applicants for first-year post-medical school appointments must register with this program.

Both men and women graduates of any L.C.M.E.-accredited medical school are eligible for appointment and all applicants will be considered without regard to race, color, religion, sex, or national origin.

Requests for application forms and information about straight residencies

should be addressed to the Chairman of the service under which training is desired. A transcript of the medical school record is required, and must either accompany the application or be furnished by the Dean of the Medical School.

Graduates of medical schools outside the United States and Canada must hold a valid standard or interim certificate of the Educational Commission for Foreign Medical Graduates (ECFMG), 3624 Market Street, Philadelphia, Pennsylvania 19104, to be considered for appointment to residencies. Physicians who are not U.S. citizens or permanent residents must have passed the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) or the Visa Qualifying Examination (VQE) to be eligible for a visa. An application which does not include a copy of a valid ECFMG certificate and evidence of passage of the FMGEMS or VQE will be considered incomplete and may be discarded without further notice to the applicant. First-year positions are rarely available for foreign medical graduates. For further information contact Catheryn Cotten, International Office, Box 3882, Duke University Medical Center, Durham, North Carolina 27710.

A North Carolina license is required for all appointees.

Reasonable requests for reduced scheduling will be considered. Inquiries should be directed to the training program directors of approved residencies or to the Office of House Staff Affairs. For further information, please contact Mary C. Fendt, Administrator, House Staff Office, Box 3951, Duke Medical Center, Durham, North Carolina 27710.

The Durham Veterans Administration Medical Center adjoins the Duke University Campus and is operated under the supervision of the Vice-President's Committee of the Duke University Medical Center. The full-time professional staff of the V.A. Medical Center are all faculty members of the School of Medicine. All training programs are integrated with corresponding programs at the Duke University Medical Center, including rotation of house officers at each hospital.

All residents and clinical fellows are required to be licensed by the State of North Carolina. This may be accomplished by (1) a residency training license that covers only training by Duke and is not convertible to a full North Carolina license or (2) a full North Carolina license that is a complete medical license obtained either by State Boards (North Carolina Boards can only be taken upon completion of internship) or National Boards and is fully reciprocal with other states for full licenses. Duke Medical Center cannot make applications for house staff. Since house staff members must have the license before beginning duties, arrangements for the license should be made in advance. All incoming house staff *must* contact Bryant Paris, North Carolina State Board of Medical Examiners, 222 North Person Street, Raleigh, North Carolina 27601, for current licensure requirements.

Application forms and information for residencies or fellowships may be obtained by writing the chairman of the appropriate department, Duke University Medical Center, Durham, North Carolina 27710.

Continuing Medical Education. Numerous formal postgraduate courses are given throughout the entire year for physicians in general practice as well as in all specialties. Conferences and tutorial seminars are also available to any physician who desires to attend and participate. Physicians in practice may make arrangements for a period of one day or more for courses tailored to their particular interests. These personal contacts with senior faculty and residents, including patient examinations as well as follow-up care, provide in-house training experience.

The annual one-week course held in Atlantic Beach in mid-July continues to be one of the most well-attended programs in the region.

For additional information, please contact Roy T. Parker, M.D., Director, or Cynthia C. Easterling, M.Ed., Coordinator, Continuing Education, Duke University School of Medicine, Box 3108, Durham, North Carolina 27710, (919) 684-6878.

Student Life



The University

Duke University, located in Durham, North Carolina, has an enrollment of 9,781 students from all fifty states and from many foreign countries. Currently, Trinity College of Arts and Sciences, the Graduate School, and the Schools of Business Administration, Divinity, Engineering, Forestry, Law, Medicine, and Nursing comprise the University.

Durham, with a population of more than 100,000, is in the Piedmont region of North Carolina, which has easy access to the sea coast and mountains. It is one of the three cities bounding the Research Triangle Park where numerous private research laboratories and governmental agencies are located. Duke University is twenty-five miles from North Carolina State University in Raleigh and eight miles from the University of North Carolina at Chapel Hill.

Conduct of Students

Duke University expects and will require of all its students cooperation in developing and maintaining high standards of scholarship and conduct.

All students are subject to the rules and regulations of the University which are currently in effect, or which, from time to time, are put into effect by the appropriate authorities of the University.

Any student, in accepting admission, indicates the willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension and/or expulsion, as may be deemed appropriate, for failure to abide by such rules and regulations, or for conduct adjudged unsatisfactory or detrimental to the University.

Living Accommodations

Duke University has several residential facilities in which single graduate and professional students live, however, married student housing is not available. Married students should refer to the section entitled Off-campus Housing.

Town House Apartments. Town House Apartments, located about three blocks from the main East-West Campus bus line, is a thirty-two-unit complex which houses single graduate and professional school students. These apartments are more spacious than most apartments found on campus or in Durham. Because of its location away from the academic facilities, students find that these apartments offer a change from normal campus life and activities. They are available for continuous occupancy throughout the calendar year.

Each air-conditioned apartment includes a living room, a master bedroom, a smaller bedroom, a bath and a half, and an all-electric kitchen with a dining area. Spacious closets and storage spaces are provided within each apartment. A swimming pool, located in the center of the complex, is open during the late spring and through out the summer months.

Occupants must make arrangements with the local utility companies to pay for electricity, gas, and telephone service. These companies usually require a deposit when initial applications for service are made. Utility companies should be contacted prior to arrival as it usually takes several days to obtain service.

Central Campus Apartments. During 1975, Duke University completed a 500-unit apartment complex. Apartments are available throughout the calendar year for continuous occupancy to single students attending graduate and professional schools.

All Central Campus Apartments are completely furnished by the University. An itemization of furnishings is included with the floor plans sent out in the application packet.

A swimming pool, located in the center of the complex, is open during the late spring and throughout the summer months. Additional facilities include a pub, convenience store, tennis courts and basketball courts.

All utilities—water, heat, air-conditioning, and electricity—are provided. Telephones, which are provided in preinstalled locations in each apartment, are serviced through Duke University's Tel-Com telephone service. Central Campus Apartments residents are responsible for having their phones connected.

Efficiency, two-bedroom, and three-bedroom apartments are rented to single students. Efficiency units are very limited in number and are not generally available to new students. Spaces in apartments for single students are provided on an individual basis with each student paying rent per academic term to the University. This method permits students to share apartments with others of their choice. When this is impractical, the Department of Housing Management strives to place persons with similar interests together.

Modular Homes. The University owns six prefabricated modular homes that are located one block from the main East-West Campus bus line. Three of the three-bedroom houses are occupied by single graduate and professional students. The houses, completely furnished, provide more privacy than most apartments and are available to single graduate and professional students for continuous occupancy throughout the calendar year.

In addition to having three bedrooms, each home contains a full bath, an all electric kitchen, a dining area, and a living room. Sliding glass doors in the living room open onto a wooden deck. An outside storage area is provided in addition to spacious closets within the home. Except for the bathroom, kitchen, and dining area, the homes are completely carpeted and paneled.

Residents of the modular homes are responsible for making arrangements with local utility companies for electricity and telephone services.

Application Procedures. When students are informed of their acceptance to the Medical School they will also receive a postcard on which to indicate preference for University housing. This postcard should be returned to the Department of Housing Management. Detailed information on the types of accommodations and application forms will be forwarded to the accepted student. Assignment to all University housing is made on a first-apply, first-assigned basis, and it is not guaranteed.

Off-campus Housing. The Department of Housing Management maintains a listing of rental apartments, rooms and houses provided by property owners or real estate agencies in Durham. These listings are available in the department

only; during the summer an assistant is available to answer questions and aid students in their attempt to obtain housing off campus. Information on commercial complexes in the Durham area may be obtained by indicating a preference for off-campus housing on the postcard which you will receive with your acceptance notice. Except for assuring that owners sign a statement of nondiscrimination, off-campus property is in no way verified and neither the University nor its agents negotiate between owners and interested parties.

The search for accommodations should begin as soon as possible after acceptance to the Medical School. A visit of two or three days will allow you the opportunity to make use of the off-campus service and to inspect personally the availabilities.

Dining Facilities. In addition to the Medical Center cafeteria, a number of dining facilities are located within a short distance from the Medical Center. Duke University Food Services (DUFS) operates a variety of dining facilities, including "all you can eat" cafeterias, a la carte restaurants, fast food facilities, salad bars and elegant dining restaurants. The seventeen DUFS locations on campus give Duke students virtually unlimited dining options.

Services Available

Student Personal and Professional Advisory Program. One important objective of Duke University School of Medicine is to promote an informal, cordial student-faculty relationship. It is also felt that this type of relationship would promote better curriculum advising and career advising for the student. Selected faculty advisers are matched with all entering students on the basis of shared mutual interest. The faculty members participating in this program have been recommended by their chairman and volunteered to serve in this capacity. This group consists of usually no more than five students. The faculty adviser not only is available to work with the students on personal areas but is their major adviser for their curricular planning.

Student Health Service. In recognition of the unique health needs of medical students whose activities bring them into far greater contact with communicable disease than the average university student, a special health program for medical students has been established. Each freshman will submit, prior to entry, the standard Duke Health History Report Form to be completed by the student and reviewed and signed by a physician. Before entry into the first year class, all students must present written proof of current immunization status. A special form will be provided for this purpose. Immunization procedures required *before* matriculation include polio, mumps, measles, rubella, diphtheria-tetanus booster, and IPPD tuberculin test. Students will not be permitted to participate in patient care activities until these requirements are met.

The objective of the Student Health Service is to provide medical care and advice to students. The main components of the Health Service include the Student Health Clinic and the Health Education Center in the Marshall I. Pickens Rehabilitation Center, located at the corner of Trent Street and Erwin Road, and the infirmary on the East Campus. For treatment of illnesses or injuries (other than life threatening emergencies), students should first contact the Student Health Clinic. This facility is open during regular and summer sessions to all students. During the regular academic year there are extended hours into the early evening on weekdays, and limited weekend hours. Outside regular clinic hours, students should call or visit the University Infirmary open twenty-four hours daily during regular academic sessions. Transportation to Student Health Clinic or Infirmary may be made by the campus bus or via Duke Public Safety Officers. Emergency transportation to the clinic or Duke Emergency room is also available.

A mandatory fee (Student Health Fee) is assessed each academic session to all students, and this covers most services offered within the Pickens Health Center or Infirmary. While the facilities of the Pickens Health Center are available to spouses and dependent children of married students, their care is not covered by the Student Health Fee. Note that the resources of the Duke University Medical Center are available to all Duke students and their spouses and children, however charges for all services received from the Medical Center (including Emergency Room services) are the responsibility of the student as are the charges for services received from physicians and hospitals not associated with Duke University.

The Duke Student Accident and Sickness Policy. Recognizing that many students will require assistance beyond that offered through the Student Health Service and covered by the Student Health Fee, the University also makes available a plan of accident and sickness insurance at a reasonable charge. This plan is designed to complement services normally not accessible to students through the Student Health Service coverage; it covers students both on and off campus, at home, or while traveling between home and school during vacation periods throughout the one year term of the policy. There are provisions in the plan for coverage of the married student's family. A full description of these provisions and other benefits of the Duke Student Accident and Sickness Insurance policy is provided in a brochure sent through the Bursar's office.

All full-time and part-time degree candidate students are required to enroll in the Student Accident and Sickness Insurance Policy unless they show evidence that they are covered by other generally comparable insurance. This evidence of comparable insurance coverage is given by completing the appropriate waiver statement on the remittance form of the University invoice. This statement requires that the name of the insurance company and the policy number be indicated as well as the signature of the student or parent. While the requirement for coverage may be waived by signing in the space on the invoice indicating willingness to assume the medical costs of any sickness or accident, the Student Health Service strongly recommends that all students be covered by accident and sickness insurance.

Counseling and Psychological Services. Counseling and Psychological Services (CAPS) is located in Suite 214, Old Chemistry Building, on West Campus next to the Medical School. Services are available to all undergraduate, graduate, and professional students enrolled at Duke University. CAPS provides a coordinated and comprehensive range of services including evaluation and brief counseling/psychotherapy regarding a wide range of concerns, including such issues as self-esteem and identity, family relationships, academic performance, dating, intimacy and sexual concerns. Career counseling is also provided and a career library with sources of occupational and educational information is maintained.

Each year CAPS offers a series of self-development seminars focusing on skill development and special interests. Groups may cover such topics as coping with stress, enriching relationships, dealing with excessive perfectionism, and coping with bulimia. Interested students may contact CAPS for further information.

The professional staff is composed of clinical social workers, psychiatrists, and clinical and counseling psychologists who are experienced in working with young adults. CAPS maintains a policy of *strict confidentiality* about each student's contact with the CAPS staff. Such information can be released, however, upon the student's specific written authorization.

Initial evaluation and brief counseling/psychotherapy, as well as skills development seminars, are covered by payment of the student health fee. There are no additional costs for these services. If appropriate, a referral may be made to other

staff members or to a variety of local resources including multidisciplinary mental health professionals in private practice and clinic settings.

Appointments may be made by telephone or at the CAPS office. Office hours are Monday through Friday between 8 A.M. and 5 P.M. If a student's concern needs immediate attention, it should be indicated by the student and every effort will be made for a counselor to talk with the student at the earliest possible time.

Additionally, standardized testing is administered for the University community by CAPS. These include the Graduate Record Examination (GRE), Medical College Admission Test (MCAT), Law School Admission Test (LSAT), and Graduate Management Admission Test (GMAT).

Another important function of CAPS is the availability of the staff to the entire University community for consultation and participation in educational activities regarding student development and general mental health issues. The staff works with other campus personnel including administrators, faculty, the Student Health Service, Religious Life Staff, Residential Advisers, and student groups. CAPS staff members are available to faculty, staff, and students daily by phone or by appointment for consultation about student issues and concerns.

For additional information, call CAPS 919/684-5100.

Student and Professional Organizations

Alpha Omega Alpha. Alpha Omega Alpha Honorary Medical Fraternity was organized nationally in 1902 and the Duke Chapter (North Carolina Alpha) was chartered in 1931. The aims of this society are the promotion of scholarship and research in medical schools, the encouragement of high standards of character and conduct among students and graduates, and the recognition of high attainment in medical science, practice, and related fields. Students who have demonstrated leadership and academic promise of future achievement are elected. Membership is limited to no more than one sixth of any class and of these as many as one half may be elected in the junior year. Honorary membership in the fraternity, as well as honorary alumni and faculty membership, may also be conferred upon certain physicians who have distinguished themselves in the various areas of medical teaching, research, and practice.

Davison Society. All medical students are dues-paying members of the Davison Society, named for the first Dean of Duke Medical School. The Society is governed by the Davison Council which consists of elected officers (President, Service Vice-President, Social Vice-President, Secretary, Treasurer, and Intramural Sports Chairman) and elected representatives from each class. Primary responsibilities of the council include: chartering of medical student groups, budgeting funds for student groups and medical school activities, organization of medical school activities and social events, appointment of medical students to Medical Center and University committees, and representing student views to the pertinent faculty and administration.

Medical student groups affiliated with, and in the past funded by the Davison Society include: the American Medical Student Association, American Medical Women's Association, the North Carolina Student Rural Health Coalition, the North Carolina Medical Society Student Chapter, the Student National Medical Association, and the East End Health Clinic.

Meetings of the Council are open to all students and minutes of Council meetings are posted. The members of the Council are elected in the spring of each year except for the first year class representatives who are elected during the first fall after matriculation.

The Engel Society. The Engel Society, established in 1966 as a memorial to Professor Frank L. Engel, is designed to promote intellectual and social interac-

tion between students and faculty. Membership is limited to six junior students and six senior students who have demonstrated an inquisitive nature, humanitarian interests, and high scholastic ability. Four faculty members are selected annually by members of the society for three year terms. Six dinner meetings with guest speakers are held each year. Other students may be invited to participate.

Duke University Medical Alumni Association. The Duke Medical Alumni Association consists of nearly 7,000 members including all graduates of the Medical School, past and present faculty, and all past and present house officers of Duke Hospital. A magazine is sent to all members three times annually. November reunions are held each year in Durham. Alumni groups meet in several states and meetings are held in conjunction with the meetings of the American College of Physicians, the Southern Medical Association, the North Carolina Medical Society, and several departmental specialty society meetings. Several social functions for medical students are sponsored annually, as is a Business of Medicine Series to provide free information on taxes, insurance, wills, and so forth. The Medical Alumni Association also maintains a listing of alumni willing to host students in their local area. One of the more popular programs is the Alumni Candy Jar.

Officers. President: Elizabeth Baker, M.D., 1975, Hershey, Pennsylvania; Secretary-Treasurer: Jay M. Arena, M.D., 1932, Durham, North Carolina; R. C. "Bucky" Waters, Assistant Vice-President for Health Affairs-Alumni and Development; Janet Sanfilippo, Director, Medical Alumni Affairs.

Awards and Prizes

Davison Scholarship. The Davison Scholarship award, consisting of \$1,000, is supported by the Davison Club in the memory of Dean Davison to enable a medical student to participate in a clinical science elective outside the United States in an area of primary care. Any student eligible to study away may apply for the award. For consideration for the scholarship, the elective must be approved by the Study Away Committee.

Thomas Jefferson Award. This award, consisting of \$100, a certificate, and a book recognizes a graduating senior student who has made outstanding contributions to the University or to fields which have not been traditionally confined to science and medicine. The award is given by the Awards Committee to a graduating senior.

The Joseph Eldridge Markee Memorial Award in Anatomy. This award, donated by the friends and family of the late Dr. J. E. Markee, James B. Duke Professor of Anatomy and Chairman of the Department of Anatomy from 1943 to 1966, consists of a certificate, medallion, and cash award of \$200. It is presented by the Department of Anatomy to the most outstanding student in anatomy during the first year in the Medical School.

C. V. Mosby Book Award. Three graduating senior students are selected by the Awards Committee for active participation in service to the students, community, and medical school. The award is a Mosby book of the student's selection.

Trent Prize. An annual award of \$100 is given to a Duke medical student for the best essay on any topic in the history of medicine and allied sciences. Mary Trent Semans established this award in memory of the late Josiah C. Trent to encourage students to undertake independent work in the history of medicine and to utilize the resources of the Trent Collection.

Upjohn Award. The award consists of \$200 cash and a certificate and is presented to a Duke graduating senior for excellence in community health science projects and service to the community.

Sandoz Award. This award is given to a senior student who has done distinguished work in basic science research or clinical research. Students will be nominated for this award by departmental Chairmen with whom their work has been done. The work must have been presented at the AOA symposium and voted upon by the Awards Committee. It consists of a plaque and a check for \$100 and is limited to one student.

Ciba Award. This award is given to a third year student who has contributed to the health care of the community. Students are nominated by the student body and voted upon by them. The award consists of the complete set of medical illustrations and text by Frank Netter.

Other Awards. Throughout the year, Duke Medical School receives notification of awards consisting of books, money, and/or plaques or medals to be awarded to students in a variety of fields at all medical schools on a national competitive basis selected by committees of the sponsoring organizations. These awards are screened by the Assistant Dean for Student Affairs who announces awards which are of interest to the Duke medical students. Since these are national competitions, they vary from year to year.

Admission



Admission Procedures

Good study habits, intelligence, character, and integrity are essential qualifications for admission. Beyond this, premedical students should strive for an education that develops abilities to observe critically, think analytically, and work independently. Though a knowledge of basic scientific principles should be secured, the competence with which premedical students conduct their undergraduate careers is of more importance than the specific subjects which they study.

Application for Admission. The Duke University School of Medicine participates in the American Medical College Application Service (AMCAS). Application materials may be obtained from a premedical adviser or by writing: American Medical College Application Service, Association of American Medical Colleges, Suite 301, 1776 Massachusetts Avenue, N.W., Washington, DC 20036.

Upon receipt of the application materials from AMCAS, a supplemental application and a bulletin of the School of Medicine will be mailed which will serve as notification of receipt of the application from AMCAS. Applications are received by AMCAS any time after June 15 until November 1. Applicants are urged to file their applications as early as possible. The deadline for receipt of the supplemental application is 15 December.

Upon receipt of the supplemental application, two faculty members will determine whether or not to proceed with an interview.

Requirements. Admission to the School of Medicine requires a minimum of ninety hours of approved college credit including one year of college English (consisting primarily of expository English composition), one year of inorganic chemistry, one year of organic chemistry, one year of physics, one year of biology and/or zoology, and one year of calculus. Embryology and physical chemistry are strongly recommended but not required. An introductory course in biochemistry during the senior year would be helpful. All science requirements must be completed not more than seven years prior to entrance.

The Medical College Admission Test, administered by the American College Testing Programs and Services, P.O. Box 414, Iowa City, Iowa 52240, is required of all applicants. This test is given in April and September of each year at numerous colleges throughout the United States. Students should consult their premedical advisers and arrange to take this test in April of the year they plan to submit applications for admission.

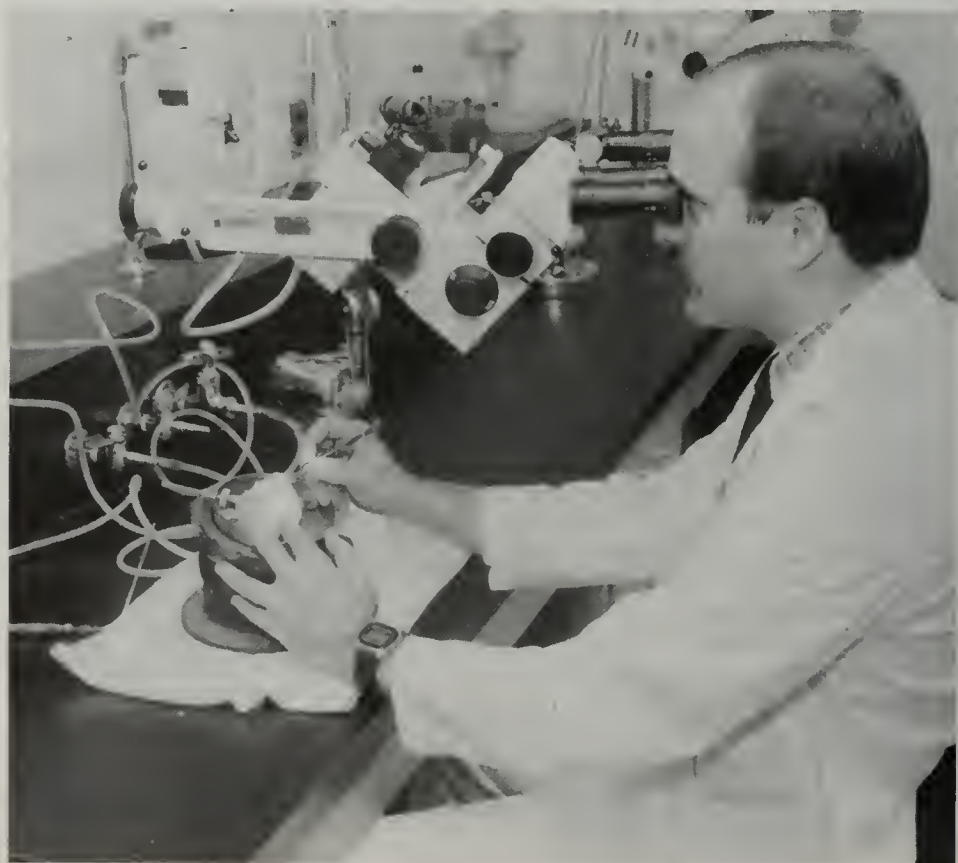
Selection

The earliest date of notification of acceptance is 15 October for students entering the following August. Data on each candidate are carefully evaluated by the Committee on Admissions. If the distance is not too great, a personal interview will be conducted at Duke for those students with satisfactory credentials. Other candidates will be referred for personal interviews with regional representatives of the Admissions Committee. Those candidates who demonstrate the most promise for exceptional performance in their future practice of medicine are admitted on the basis of merit and are notified as soon as possible whether or not they have been accepted. In order to ensure enrollment, accepted candidates must return a signed agreement and a \$50 deposit within three weeks after notification. Since admission is offered a considerable period in advance of matriculation, it is provisional upon the successful completion of any incomplete premedical required subjects as well as the continued demonstration of scholarship in college course work.

Transfer

Applicants who have completed the basic sciences in other medical schools will be considered for transfer only as space permits. Such transfer students are required to complete the second and fourth years of the Duke curriculum.

Performance of Part I of the National Board Examination or MSKP is a requirement for transfer applicants. Duke does not sponsor applicants to take the National



Board Examination, although the scores must be received as part of the evaluation procedure.

The policy governing tuition for transfer students is that they will pay the same tuition in their initial year and all subsequent years as the class with which they enter.

Requests for application materials should be sent to the Committee on Admissions, Box 3710, Duke University Medical Center, Durham, North Carolina 27710.

Requests for application materials are accepted after 15 November. 1 March is the deadline date for the receipt of applications. Personal interviews will be arranged for those with satisfactory credentials. Transfers into the freshman or senior year are not permitted.

Advanced Placement

Advanced placement is offered to qualified first-year students on an optional basis for the following first semester courses: anatomy, biochemistry, genetics, and physiology. Students desiring consideration for advanced placement are required to take examinations in applicable subjects during the first week of medical school. Those who are granted and accept advanced placement for a specific course are not required to enroll in that course but will be responsible for arranging mutually satisfactory substitutions with the appropriate department Chairman.

Students who have been awarded Ph.D. degrees in biomedical or preclinical sciences may apply for a three-year program to obtain their M.D. degrees. This program consists of the regular core basic science courses required of all freshman medical students, core clinical rotations during the second year, followed by senior clinical electives.

Reapplication

Students who wish to apply for a second time should write AMCAS requesting new application forms. Supporting documents will be transferred to the new application file. These documents will be kept on file for three years.



Summary

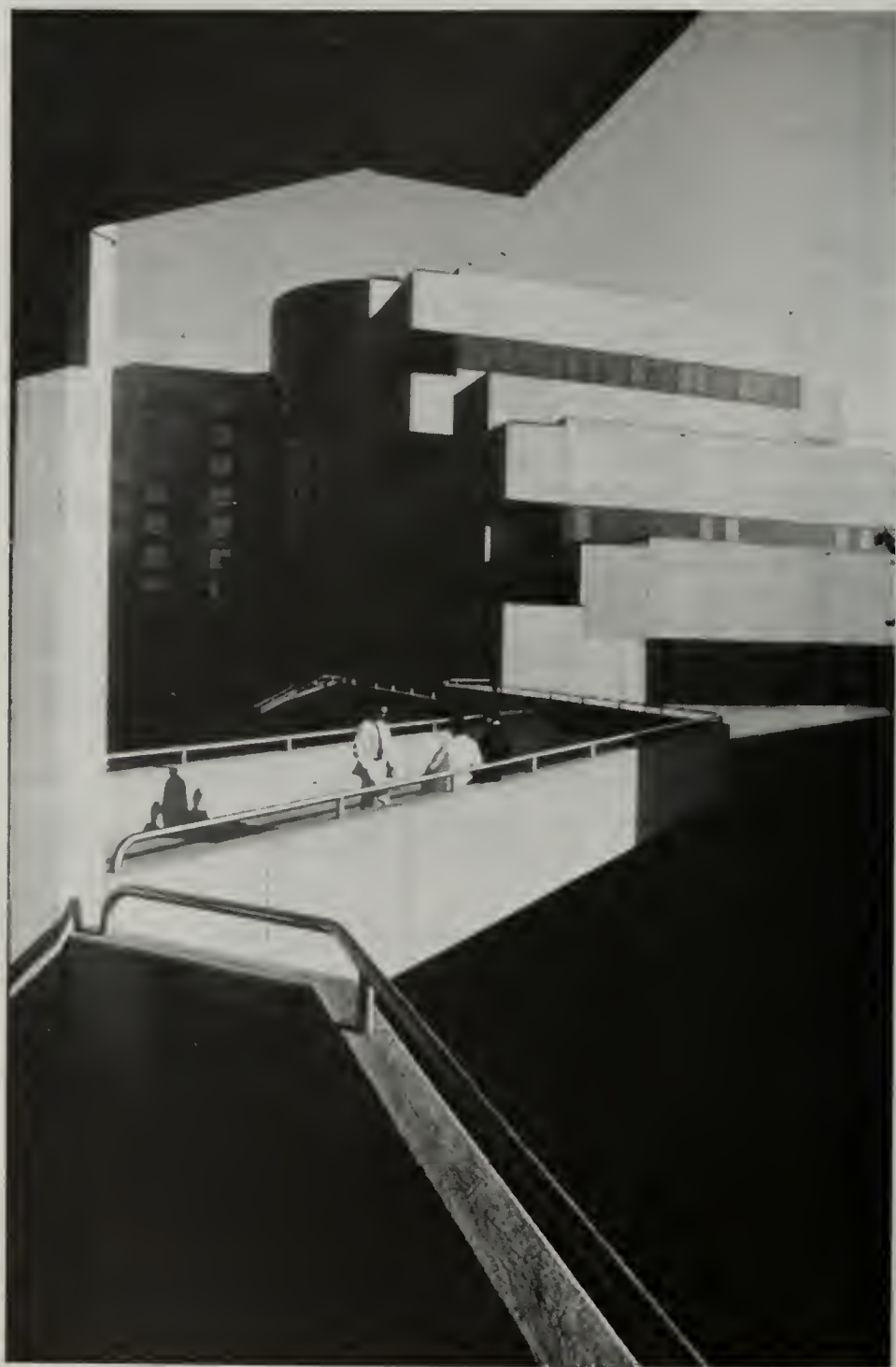
Three years of college work, forty-five dollars (\$45) nonrefundable application fee, fifty dollar (\$50) deposit within three weeks of notification of acceptance, and the Medical College Admission Test are required. The estimated class size in 1986-87 freshman class is 106.

Roster of Regional Representatives of Admissions Committee

Alabama:	<i>Birmingham</i> , Ben V. Branscomb; <i>Tuskegee</i> , Alexander W. Boone, Jr.
Alaska:	<i>Anchor Point</i> , Milo H. Fritz; <i>Sitka</i> , J. Paul Lunas
Arizona:	<i>Phoenix</i> , Robert H. Barnes; <i>Scottsdale</i> , Boyd H. Metcalf
Arkansas:	<i>Little Rock</i> , Rosalind Smith Abernathy; E. Clinton Texter, Jr.
Belgium:	<i>Liege</i> , Emile F. LeClercq
California:	<i>Bakersfield</i> , Victor S. Constantine; <i>Berkeley</i> , Bruce Africa; <i>Beverly Hills</i> , Ben Kohn; <i>Burlingame</i> , J. M. Javer; <i>Lester H. Margolis</i> , Andrew Nadell; <i>Carlsbad</i> , Barry B. Campbell; <i>Fairfield</i> , William R. Nesbitt; <i>Fontana</i> , Henry L. Burks; <i>Hayward</i> , William New, Jr.; <i>Irvine</i> , A. Brian Davis; <i>Los Angeles</i> , Walter Lusk, Kenneth P. Ramming, Douglas F. Smiley; <i>Palo Alto</i> , Gustave Freeman, James B. Golden, John B. Simpson; <i>Redlands</i> , Perry Dyke; <i>Riverside</i> , James S. Mayson; <i>San Diego</i> , Donald J. Williams; <i>San Francisco</i> , Philip G. Hoffman, R. Gray Patton; <i>Santa Barbara</i> , John A. Baumann; <i>Woodland Hills</i> , Andrew A. Bonin
Canada:	<i>Montreal</i> , J. E. Gibbons; <i>Ontario</i> , John B. Armstrong
Colorado:	<i>Aurora</i> , Frederick V. Coville; <i>Colorado Springs</i> , John P. Tindall; <i>Denver</i> , Michael J. Jobin, Fred W. Schoonmaker, Charles Scoggin; <i>Englewood</i> , Bertram Goldberg
Connecticut:	<i>Greenwich</i> , Milton F. Campbell; <i>Hartford</i> , William H. Glass; <i>Mystic</i> , Henry B. Freye; <i>New Haven</i> , David J. Goodkind, Ned M. Shutkin
England:	<i>Oxford</i> , Sanders Williams
Florida:	<i>Hallandale</i> , Norman Moskowitz; <i>Jacksonville</i> , J. David Cahill; <i>Miami</i> , Stanley J. Cannon, James J. Hutson; <i>St. Petersburg</i> , David S. Hubbell; <i>South Miami</i> , Leonard A. Kalman; <i>Tampa</i> , Richard G. Connor, Americo A. Gonzalvo
Georgia:	<i>Albany</i> , Havner H. Parish, Jr.; <i>Atlanta</i> , Crawford F. Barnett, Jr.
Hawaii:	<i>Honolulu</i> , James G. Harrison; <i>Kailua</i> , Stanley Karansky; <i>Kealahou</i> , Thomas E. Austin
Idaho:	<i>Idaho Falls</i> , Reid H. Anderson
Illinois:	<i>Barrington</i> , George Pepper; <i>Chicago</i> , John H. Buehler, George H. Gardner, Daniel J. Pachman, Joe L. Simpson, John D. Utley, Milton Weinberg, Jr.; <i>Des Plaines</i> , Earl N. Solon; <i>Evanston</i> , Donald R. Mundie; <i>Geneva</i> , Charles A. Hanson; <i>Monmouth</i> , Kenneth E. Ambrose
Indiana:	<i>Indianapolis</i> , Norman H. Bell, Mark O. Farber, C. Conrad Johnston, Jr.
Kansas:	<i>Emporia</i> , Gould C. Garcia; <i>Lenexa</i> , David L. Smith; <i>Salina</i> , Roy B. Coffey
Kentucky:	<i>Louisville</i> , Billy Franklin Andrews, George Uhde
Louisiana:	<i>New Orleans</i> , Nancy Haslett, James A. Knight, Richard M. Paddison
Maine:	<i>Portland</i> , E. Charles Kunkle
Maryland:	<i>Baltimore</i> , C. Edward Leach, John Modlin; <i>Mt. Rainier</i> , Linda D. Green; <i>Olney</i> , Joseph Buffington; <i>Potomac</i> , Mona M. Shangold; <i>Towson</i> , William C. Battle
Massachusetts:	<i>Boston</i> , R. Wayne Alexander, G. P. Beardsley, Ann W. Crosson, Richard J. Kopelman, Britain Nicholson, Ellison C. Pierce, Jr., Stephen Sohn; <i>Brookline</i> , Bernard Levy; <i>Cambridge</i> , Paul N. Chervin; <i>Hyannis</i> , Linda A. Bishop; <i>Springfield</i> , George A. Sotirion; <i>Stoughton</i> , Philip A. Hourigan, Jr.; <i>Worcester</i> , Katherine S. Upchurch
Michigan:	<i>Ann Arbor</i> , George E. Bacon, Donald L. Rucknagel, Joann A. P. Wilson; <i>East Lansing</i> , Stephen E. Alpert, William W. Blackburn II; <i>Grosse Pointe</i> , John M. Lesesne
Minnesota:	<i>Fairmont</i> , Lawrence T. Donovan; <i>Minneapolis</i> , Martin M. Oken, Richard L. Reece; <i>Rochester</i> , William Hazel, William M. O'Fallon; <i>St. Paul</i> , John J. Fath
Missouri:	<i>Bridgeton</i> , Thomas J. Banton, Jr.; <i>Creve Couer</i> , Roman L. Patrick; <i>Kansas City</i> , Gerry Woods; <i>Springfield</i> , Norman C. Shealy; <i>St. Louis</i> , James L. Cox, W. Edwin Dodson, James R. Gavin III, Martin A. Morse
Nebraska:	<i>Omaha</i> , Helen Starke
New Hampshire:	<i>Exeter</i> , Eric D. Lister; <i>Grantham</i> , William T. Davison; <i>Hanover</i> , J. Vanderlinde; <i>Lyme Center</i> , George Margolis
New Jersey:	<i>Livingston</i> , Stephen J. Victor; <i>Moorestown</i> , Michael S. Entmacher; <i>Morristown</i> ,

- Philip K. Keats; *New Brunswick*, William E. McGough, Bernard A. Rineberg; *Paterson*, Linda F. Rankin; *Pompton Plains*, Charles W. Ross; *Summit*, Wayne S. Barber; *Watchung*, R. Christopher Stucky; *Woodcliff Lake*, Steven P. Honickman
- New York: *Endicott*, Vincent Giordano; *Great Neck*, Stephen M. Lazarus; *Ithaca*, John G. Maines; *New York*, Joan S. Adams, Michael Brownlee, Carl H. Fromer, David S. Goldman, Eddie L. Hoover, Bruce Horten, Lenard E. Jacobson, Roy B. Jones, Seymour R. Kaplan, Michael J. Lepore, Phyllis C. Leppert, Leonard H. Schuyler, Robert A. Shimm, David N. Silvers, Nathan St. Amand, Melvin L. Thrash; *Pittsford*, Rufus S. Bynum; *Rochester*, David N. Broadbent; *Syracuse*, Herbert Lourie, L. Stewart Massad; *White Plains*, Harvey J. Cohen
- North Dakota: *Bismarck*, Robert B. Tudor
- Ohio: *Canton*, John A. Nadas; *Cincinnati*, Murray B. Sheldon, Jr.; *Cleveland*, Robert B. Kubek; *Columbus*, David S. Forth, Lucy R. Freedy, George W. Paulson, James V. Warren; *Elyria*, William L. Hassler; *Toledo*, George F. Alter; Kenneth Gould, Jr.
- Oklahoma: *Muskogee*, Robert H. Gibbs
- Oregon: *Eugene*, Paul W. Jones; *Portland*, Marcia Freed, Joseph F. Paquet; Martin S. Schwartz
- Pennsylvania: *Bryn Mawr*, John V. Blady; *Camp Hill*, Alfred J. Sherman; *Dunmore*, Louis C. Waller; *Harrisburg*, Earl S. Moyer; *Johnstown*, W. Frederick Mayer; *Lancaster*, Richard D. Gentzler; *Philadelphia*, Max W. Fischbach, Mary Ann Forciea, John J. Furth, David M. Goodner, James R. Harp, Richard I. Katz, Sheila M. Katz, Mildred H. LaFontaine, Dianne M. Quinn, Graham E. Quinn, Alfred M. Sellers; *Pittsburgh*, Richard L. Green, Jack D. Myers; *Wynnewood*, Frank Kern
- Puerto Rico: *Santurce*, Rafael Hernandez-Salanda
- Rhode Island: *Lincoln*, Henry G. Magendantz; *Providence*, Benjamin T. Jackson
- South Carolina: *Charleston*, Edward Frost Parker; *Columbia*, Collin F. Baker, Ben N. Miller, James M. Timmons; *Greenville*, Raymond C. Ramage
- South Dakota: *Sioux Falls*, Charles Beauchamp
- Tennessee: *Chattanooga*, Richard Van Fletcher; *Knoxville*, Alan Solomon; *Memphis*, Peter D. Jones; *Nashville*, Walter G. Gobbel, Jr., Alexander C. McLeod, Greer Ricketson
- Texas: *Amarillo*, Gayle H. Bickers; *Austin*, Frank A. Morris, Jr.; *Dallas*, Reuben H. Adams, W. Crockett Cheers, Jr., William Shapiro; *Houston*, Barry N. Hyman, Eugenie Kleinerma, Elizabeth B. Powell, Peter T. Scardino, H. Grant Taylor, Leonard A. Zwelling; *San Antonio*, Frederick L. Grover
- Utah: *Salt Lake City*, N. Branson Call, Andrew Deiss, William A. Gay, Jr.
- Vermont: *Burlington*, Edward S. Horton
- Virginia: *Richmond*, R. Lewis Wright; *Virginia Beach*, Ruth Capp; *Waynesboro*, Thomas L. Gorsuch
- Washington: *Bellevue*, David T. Pitkethly; *Bothell*, Ronald C. Reed; *Longview*, Clifford J. Schostal; *Renton*, Wallace H. J. Chang; *Seattle*, Gregory J. Raugi; *Spokane*, Charles L. Dorsey
- West Virginia: *Wheeling*, David P. Hill
- Wisconsin: *Milwaukee*, Jack L. Teasley
- Wyoming: *Sheridan*, James L. Scott; *Teton Village*, John A. Feagin

Financial Information



Fees and Expenses

Tuition. The following table represents an estimate of a student's necessary expenses in the School of Medicine. The total of these figures suggests a basic minimum budget of approximately \$17,000. These are estimated figures only and are based on a survey of enrolled students. Tuition and fees are subject to change without notice. Allowances for recreation, travel, clothing, and other miscellaneous items must be added to this estimate with allowances for individual needs and tastes.

Tuition:	First and second years \$11,100 each; years three and four \$10,400 each.
Accident and Sickness Insurance (subject to change)	233.00
Laboratory Fee (includes microscope rental, first year only)*	175.00
Annual Cost of Books: first year	512.00
Annual Cost of Books: second year	390.00
Annual Cost of Books: third and fourth year	171.00
Lodging	2,500.00
Board (University Dining Halls): first and second year	2,300.00
Board (University Dining Halls): third and fourth year	1,900.00
Student Health Servicet	253.00
Student Government (Davison Society)†	25.00
Motor Vehicle Registration	30.00

*Sphygmomanometer, ophthalmoscope, otoscope, and other equipment required of each student must conform to rigid standards.

†Mandatory fee. For details, please refer to Student Health Service.

Tuition and fees are payable on a term basis and all students are required to pay full tuition for four years as a requirement for graduation. For the freshman year one-half of the annual tuition and fees is billed in July and the other one-half in December. Students who must repeat 60 percent or more of the required first year courses will pay full tuition while prorated tuition will be paid by those repeating less than 60 percent of those courses. Second year students are billed at the rate of one-seventh of the annual tuition and fees for the Introduction to Clinical Diagnosis and each eight-week rotation and one-fourteenth of the annual tuition and fees for each four-week rotation. Juniors and seniors are billed in accordance with the number of elective credits for which they are registered. The cost per credit equals the annual tuition divided by the number of credits required per year.

Payment of Accounts for Fall and Spring. Monthly invoices for tuition, fees, and other charges will be sent by the Bursar's office and are payable upon receipt but no later than the late payment date. As a part of the agreement of admission to Duke University a student is required to pay all invoices as presented. No deferred payment plans are available. If full payment is not received by the late payment date, a late payment charge as described below will be assessed on the next invoice and certain restrictions as stated below will be applied. Failure to receive an invoice does not warrant exemption from the payment of tuition and fees nor from the penalties and restrictions. Nonregistered students will be required to make payment at the time of registration.

Late Payment Charge. If the "Total Amount Due" on an invoice is not received by the late payment date, the next invoice will reflect a penalty charge of 1 percent per month assessed on the past due balance regardless of the number of days past due. The "Past Due Balance" is defined as the previous balance less any payments and credits received on or before the due date and also any student loan memo credits related to the previous balance which appear on the invoice. The amount of the 1 percent penalty charge will be the same regardless of the number of days payment is received after the due date.

Restrictions. An individual will be in default of this agreement if the total amount due on the student invoice is not paid in full by the invoice due date. An individual who is in default will not be allowed to register for classes, receive a transcript of academic records, have academic credits certified, be granted a leave of absence, or receive a diploma at graduation. In addition, an individual in default may be subject to withdrawal from school.

No credit will be given for any term in which the tuition has not been paid, whether the work has been at Duke or elsewhere. It is not advisable for students to attempt outside work to defray their expenses during the academic year. Spouses of medical students desiring employment may secure information from the Duke University Personnel Office.

Fall and Spring Refunds. Tuition and fees refunds are governed by the following policy:

1. In the event of death a full tuition and fees refund will be granted.
2. In all other cases of withdrawal, students or their parents may elect to have tuition refunded or carried forward as a credit for later study according to the following schedule:
 - a. withdrawal before the beginning of classes—full refund;
 - b. withdrawal during the first or second week—80 percent;
 - c. withdrawal during the third through fifth week—60 percent;
 - d. withdrawal during the sixth week—20 percent;
 - e. withdrawal after the six week—no refund;
 - f. tuition charges paid from grants or loans will be restored to those funds on the same prorata basis and will not be refunded or carried forward.
3. In the case of changing category from full-time to part-time, dropping special fee courses (music, art, golf, etc.), or dropping audit courses, a full refund will be granted during the drop/add period. Subsequent to the drop/add period changes of category will not be allowed. Students may, however, withdraw from courses after the drop/add period with no refund or add new courses if the proper tuition is paid.

Transcripts. Requests for transcripts of academic records should be directed to the Office of the Medical Center Registrar. A minimum fee of one dollar, payable in advance, is charged for each copy.

Living Accommodations

Housing Costs. For the 1985-86 academic year, rental rates for the first-year medical student were \$2,250 for the Town House apartments and \$1,978 for the Modular Homes. Utility charges are not included in these rates.

Rental rates in Central Campus Apartments ranged from \$2,259 to \$3,488 for single first-year medical students. Utility charges are included in the Central Campus Apartment rates. These rates are per person per academic year.

Rental rates are expected to increase for the 1986-87 academic year. A deposit is required with all applications. The deposit will not be refunded if cancellation is received after an assignment is made.

Refunds of rent will be calculated in accordance with the procedures published by the Department of Housing Management.

Food and other expenses. Duke University Food Services and Duke University Store operations are located on campus to service the needs of the Duke community. For the convenience of students, the University Identification card, called The Duke Card, can be used to access pre-paid accounts and make purchases in these facilities.

There are two kinds of accounts: the dining account, which can be used for food purchases only, and the flexible spending account, which can be used to purchase not only food, but any items sold by Duke stores, such as books, supplies, laundry services, health and beauty aids, and more. These campus retail operations also accept cash.

For more information about establishing an account, contact the Auxiliary Services Contract Office, 024 Union West, Duke University, Durham, North Carolina 27706 919/684-5800.

Motor Vehicle Registration

Each motor vehicle operated on Duke University campuses by students enrolled in the School of Medicine must be registered at the Medical Center Traffic Office, PRT Level, Parking Deck II, within five days after operation on the campus begins, and thereafter must display the proper registration decal.

All students must pay an annual fee of \$30 for each four-wheeled motor vehicle and \$15 for each motorbike or motor scooter registered. Bicycles are registered free of charge at the Public Safety Department, 2010 Campus Drive.

To register a vehicle, the student must present a valid state registration for each vehicle registered and a valid state operator's license.

Parking, traffic, and safety regulations will be given each student at the time of registration of the vehicle(s). Students are expected to abide by these regulations.

Merit Scholarships for Medical Students

The School of Medicine offers the following endowed scholarships, ranging from \$1,500 to full four-year tuition, based solely on academic excellence:

Barham Endowed Merit Scholarship, established November, 1984, by gift from Mr. and Mrs. Joseph Barham, Oak Ridge, Louisiana.

Edward H. Benenson Merit Scholarship, established October, 1984, by gift from Mr. Edward H. Benenson, New York.

Clinical Faculty Merit Scholarship, established November, 1985, by clinical faculty.

Family Dollar Scholarship, established November, 1984 by gift from Mr. Leon Levine, Chairman of the Board, Family Dollar Stores, Inc., Charlotte, North Carolina; for minority students.

Dr. William Redin Kirk Memorial Trust for North Carolinians, established March, 1984, by bequest of Mr. Frederick H. Pierce, Owensboro, Kentucky.

Medical Faculty Wives Merit Scholarship, established August, 1985, by medical faculty wives.

Dr. Kenneth L. Pickrell Scholarship, established February, 1984, by gift from the Department of Surgery, Duke University Medical Center.

Department of Psychiatry Merit Scholarship, established November, 1985, by the Department of Psychiatry, Duke University Medical Center.

Department of Radiology Merit Scholarship, established September, 1985, by the Department of Radiology, Duke University Medical Center.

School of Medicine Merit Scholarship Fund, established 1984 by gifts from medical alumni, students, and American Medical Association-Education and Research Foundation.

The Merit Scholarship Selection Committee makes final selections from nominees chosen by the Medical School Admissions Office. Candidates may be notified as early as January or February of final selection and alternate status. Annual renewal is contingent upon satisfactory academic progress.

Financial need is not a criteria for selection, however, applicants who feel their financial need is greater than the merit award may apply for financial aid.

The Dean's Partial-Tuition Scholarships. Dean's Partial-Tuition Scholarships for two awards in the amount of \$7,000 each are given to academically excellent/financially needy freshmen minority students each year. Preference is given to residents of North Carolina. Selection is made by the Dean based on recommendations from the Medical School Admissions Office. Annual renewal is contingent upon satisfactory academic progress.



Research Scholarships for Medical Students.

The following research scholarships are available to enrolled students for credit during the elective portion of the third/fourth year curriculum. Final selection is made by the Student Research Scholarship Selection Committee.

Eugene A. Stead Scholarship was established by the Department of Medicine in honor of its former Chairman to develop young clinical investigators in the basic sciences. The three recipients each year must complete a twelve-months research experience under the preceptorship of either a member of the Department of Medicine who holds a secondary basic science appointment or a member of a basic science department. The recipient is designated a Stead Scholar and there is an annual seminar at which each scholar presents his or her work. Each award is in the amount of \$8,000.

Stanley Sarnoff Student Research Fellowship was established by Stanley J. Sarnoff, M.D. to develop young cardiovascular investigators. Dr. Sarnoff was Director of Cardiovascular Research at the National Institutes of Health for many years. The recipient must complete a twelve-months research experience in a cardiovascular laboratory away from the parent medical school. Duke is one of the schools eligible to select one student per year. The recipient is designated a Sarnoff Fellow and there is an annual meeting in Bethesda, Maryland at which each of the ten fellows present his or her work. The amount of each award is \$11,000 plus \$1,000 for travel.

Sickle Cell Disease Scholarships are funded by The National Foundation for Sickle Cell Disease, Inc. which awards money to the Duke Comprehensive Sickle Cell Center for research each year. The money has been designated for scholarships to students and recent graduates for support of research projects in sickle cell disease. Preference is given to black applicants for awards up to \$5,000.

Robert and Virginia McDaniel Fellowship, established by Robert and Virginia McDaniel, is for medical students who have demonstrated competency in research involving either the cardiovascular system or exercise physiology for the purpose of stimulating involvement in the general area of preventive medicine, health maintenance, and rehabilitation. One scholarship is awarded annually to a fourth year student who has completed at least twelve month's research in either the areas of cardiovascular system or exercise physiology. The recipient must complete at least six weeks of activity with the DUPAC program during or immediately following the fourth year. One \$2,500 fellowship is awarded annually.

International Health Student Fellowship provides the opportunity for one or two third year students to undertake a research project in Costa Rica under the supervision of staff at the Institute of Health Sciences, University of Costa Rica. Secondary supervision will be provided by an assigned member of the Duke faculty. Various research projects will be available in the fields of health care delivery, child health and development, or microbiology. Duke University School of Medicine will provide one roundtrip airfare plus a modest subsistence allowance. Ability to converse in Spanish will be considered highly desirable.

Duke Eye Center Research Scholarship is sponsored by the Department of Ophthalmology. One \$5,000 award for one student for at least one academic year to work on eye related research with either (a) a joint appointment in ophthalmology and a basic science department, or (b) only a basic science department. Students expressing an interest should contact Dr. Gordon K. Klintworth at 684-3550.

Financial Aid

The Duke University School of Medicine makes financial assistance available to accepted students who, due to economic circumstances, could not otherwise

attend the University. The school recognizes, however, the responsibility of the individual and the family to provide funds to achieve the objective of a medical education. Thus, the school does not consider that parents have discharged the full financial obligation for the continuing education of their sons or daughters upon the latter's completion of the undergraduate degree.

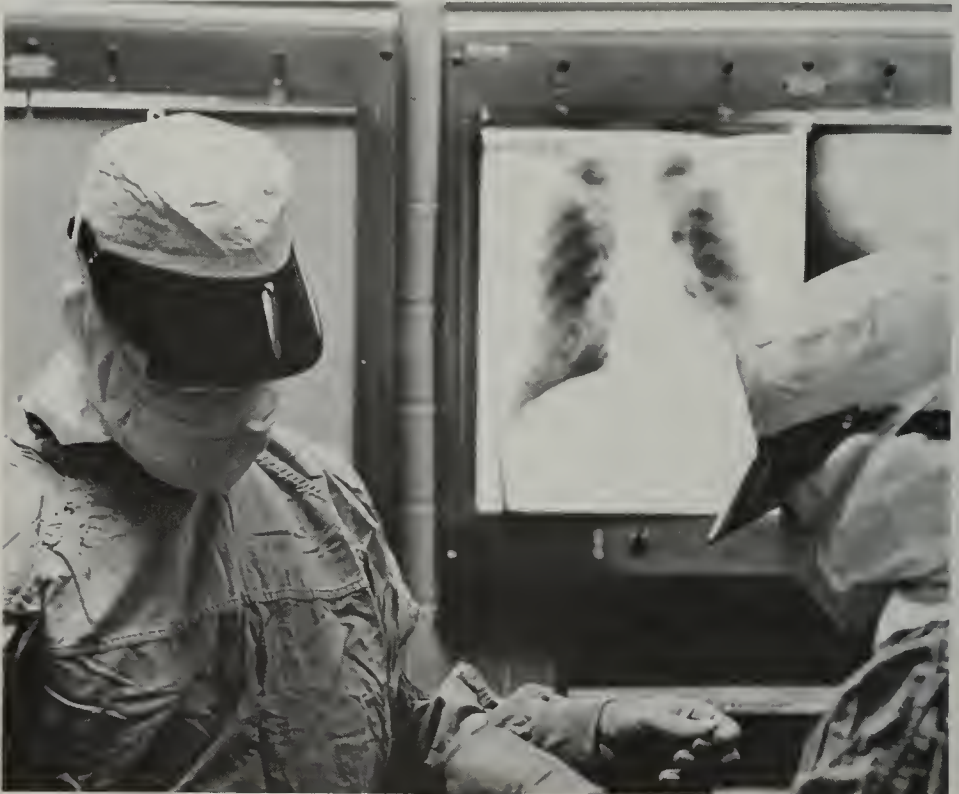
Financial assistance is available in a combined form of scholarships and loans, and all awards are made on the basis of demonstrated need; however, the School of Medicine can no longer guarantee that funds will be available for every student who documents financial need.

Financial Assistance to Incoming Freshmen. A financial aid application packet is routinely mailed by early January to each applicant who has been scheduled for a medical school interview. This mailing is without regard to whether the applicant expressed an interest in assistance on the application for admission. The economic circumstances of the applicant have no bearing on whether the applicant is accepted into the medical school.

The applicant requesting financial aid is expected to work during the summer preceding entrance into medical school and to save part of these earnings to defray a portion of the first-year expenses.

The applicant's need must be established before an award can be made. The Office of Financial Aid, therefore, requires the Duke University Medical Center application for financial aid and computations from the GAPSFAS form. Copies of federal income tax returns with supplemental schedules and a financial aid transcript are also required as part of the financial aid application.

An official financial aid award notice is sent to the accepted applicant within a few days after receipt of the required forms. Awards are conditional until all required documents are received.



The present financial aid package, which is subject to change, for qualified North Carolinians is based on a tuition grant up to \$10,000. Financial need in excess of \$10,000 must come next from a \$5,000 federally insured/guaranteed student loan, and need in excess of \$15,000 comes from one-half school grants and one-half school loans.

The present financial aid package, which is subject to change, for qualified students from outside North Carolina is based on a \$5,000 federal (or state) insured student loan. Financial need in excess of \$5,000 comes from one-half school gift and one-half from school loan.

Financial Assistance to Upperclassmen. Annual reapplication is required of all scholarship and loan recipients. Upperclassmen seeking financial assistance for the first time should consult with the Coordinator of Financial Aid.

Duke University Medical Center Endowed Funds.

Charles W. Banner Loan Fund, established in 1953 by a gift from Mrs. Edward B. Benjamin.

Germain Bernard Scholarship, established in 1959 by the B. C. Remedy Company.

Thomas C. Bost Scholarship, established in 1965 by a gift from Dr. Thomas C. Bost, supplemented by subsequent gifts.

Elizabeth Burgess Bressler Memorial Scholarship Fund, established in 1983 by her children: Garrett S. Bressler, M.D.; Robert B. Bressler, M.D.; Barbara B. Marques; Peter B. Bressler, M.D.

James L. Clark Memorial Scholarship, established in 1965 by a gift from Mr. and Mrs. Marvin D. Clark and supplemented by gifts from other donors.

C. T. Council Scholarship, established in 1959 by the B. C. Remedy Company.

John H. Dorminy Scholarship, established in 1980 by gift from John H. Dorminy, Jr.

Herbert T. Dukes, M.D. Memorial Loan Fund, established in 1983 by his classmates and friends.

Eagles-Andrews Memorial Scholarship, established in 1982 by a gift from Dr. and Mrs. William M. Eagles.

William F. Franck Memorial Scholarship, established in 1958 by gift from William F. Franck, Jr. '39, and supplemented by additional gifts.

Joseph W. Greer Scholarship, established in 1980 by gift from Mr. and Mrs. Joseph H. Greer.

Warren W. Hobbie Fund, established in 1980 by trustees of the Warren W. Hobbie Charitable Trust.

George Lee Hundley and Rebecca Barnhill Hundley Fund, established in 1980 by gift from George Lee and Rebecca Barnhill Hundley.

H. B. and Adelaide F. Ingle Medical Scholarship, established in 1976 by gift from Mr. and Mrs. Harry B. Ingle.

B. Everett Jordan Scholarship, established in 1974 by the late Senator B. Everett Jordan and his widow, Katherine Jordan.

Thomas D. Kinney, M.D. Memorial Scholarship, established in 1980 by gifts from his widow, Dr. Eleanor R. Kinney, and their children: Thomas R. Kinney, M.D.; Eleanor D. Kinney; J.D., Hannah C. Kinney, M.D.; and Janet S. Kinney, M.D.

Dr. John Haden Lane Memorial Scholarship, established in 1968 by gift from Edward H. Lane Foundation.

E. C. Langston Medical Scholarship, established in 1979 by bequest of Mrs. Denzil L. Mosteller.

Paul E. Leviton Medical Scholarship, established in 1981 from the estate of Paul E. Leviton.

James Cecil McGehee Memorial Medical Scholarship, established in 1975 by gift from C. G. McGehee, Jr.

Medical Alumni Scholarship, established in 1974 by Duke Medical Alumni.
 Medical Class of 1950, established in 1980 by gifts from graduates of 1950.
 Medical Class of 1981 and AESCULAPIAN/80 Staff, established in 1980.
 Medical School Faculty Wives Scholarship, established in 1968 by a gift from the Medical School faculty wives whose source of funds is proceeds from the Nearly New Shoppe.
 John F. Ott Endowment Fund, established in 1984 by bequest of John F. Ott, M.D., 1943.
 Physical Medicine Scholarship, established in 1963 by gift from Central Carolina Convalescent Hospital, Inc., Greensboro, North Carolina.
 Radiological Science Medical Student Loan Fund, established in 1980 by the Department of Radiology.
 Senior Class Gift, established by graduates of classes of 1977 and 1978.
 Melvin D. and Judith N. Small Medical School Scholarship Fund was established in 1976 by gift from Dr. Melvin D. and Mrs. Judith N. Small.
 Sigmund Sternberger Endowment Fund, established in 1978 by gift from the Sigmund Sternberger Foundation, Inc., Greensboro, North Carolina.
 William E. Stevens, Jr. Scholarship, established in 1983 by the Broyhill Foundation, Lenoir, North Carolina.
 B. W. Stiles Scholarship, established in 1981 by gift from the Mary Duke Biddle Foundation.
 Francis and Elizabeth Swett Scholarship, established in 1966 by gift from the late Dr. and Mrs. Swett.
 Dr. Hillory M. Wilder Memorial Scholarship, established in 1962 by bequest from Celeste Wilder Blake and Kenneth M. Blake.
 Sue Eggleston Woodward Memorial Scholarship, established in 1966 by gifts from parents, relatives, and friends.
 Vivian Zirkle Memorial Scholarship, established in 1981 by gift from Drs. Lewis and Sara Zirkle.

Other Medical School Scholarships. Mary Duke Biddle Foundation Scholarships, Dr. E. Eugene Owen Scholarship, Duke University School of Medicine Scholarships, State of North Carolina (tuition remission up to \$2,000), and Slane Family Scholarship.

Federal Scholarships. Armed Forces (Army, Navy, and Air Force) Scholarship programs are available for accepted or enrolled students. The recipient receives full tuition, fees, and living allowance in return for a commitment of service as a physician for each year of funding. The special application is made directly to the program in which the student is interested.

First-Year Scholarships for Students of Exceptional Financial Need. This federally funded program pays tuition, fees, and living expense. The student must have zero family resources as measured by a nationally recognized needs analysis. Recipients are selected by the school using federal criteria. For 1985-86 there was one scholarship.

North Carolina Board of Governors Medical Scholarships (BGMS). Board of Governors Medical Scholarships (BGMS) are awarded annually to seventeen first-year medical school candidates who have been accepted for admission at one of the four medical schools in North Carolina. BGMS recipients are selected from among candidates of all races who are financially disadvantaged state residents and who have expressed an interest in practicing medicine in the State of North Carolina. The awards provide a yearly stipend of \$4,000 plus tuition and mandatory fees and may be renewed for four years. Information about the scholarship may be obtained from the financial aid office.

Loans

University loans are available under the specific restrictions of the loan funds and are awarded on the basis of financial need. Some of them are: W. K. Kellogg Foundation Loan Fund, Seaborn L. Hardman Loan Fund, Medical Freshman Tuition Loan, Scott Loan Fund, Charles W. Banner Loan Fund, Robert Wood Johnson Foundation Student Aid Program, National Direct Student Loans, and U.S. Health Professions loans.

The Francis and Elizabeth Swett Loan Fund is an emergency loan available in small amounts to any medical student on a no-interest basis for a short period of time.

Federally Insured Student Loans are available to full-time financially needy students at Duke University (an approved lender) if the student is unable to locate a home-town lender.

Loans from Outside the University

North Carolina Student Loan Program for Health, Science and Mathematics. These loans provide financial assistance to North Carolina residents who demonstrate need as determined by the board. Loans are available for study in the medical fields, mathematics, and science programs that lead to a degree. The applicant must be a domiciliary of North Carolina and accepted as a full-time student in an accredited associate, baccalaureate, master's, or doctoral program leading to a degree. Loan recipients in some professional or allied health programs may cancel their loans through approved service in shortage areas, public institutions, or private practice. Medical students may receive up to \$6,000 per year for each of the four years; master's degree students are eligible for two loans of up to \$3,000 each; bachelor's degree students are eligible for three loans of up to \$2,500 each. For application forms and more information write: Executive Secretary, Board for Need-Based Student Loans, 116 West Jones Street, Raleigh, North Carolina 27605, or telephone (919) 733-2164.

Health Education Assistance Loans. These loans are available to accepted or enrolled students. There is an annual maximum, and interest, which is higher than the rate for need-based loans, is not subsidized during enrollment. The special application is available in the financial aid office.

Federally or State Insured (Guaranteed) Student Loans. FISL/GSL are available from many home-town banks. The annual maximum for medical students is \$5,000 with an aggregate maximum of \$25,000. Parental financial information is required and the bank may have an annual maximum less than the above figure. The eight percent interest is federally subsidized until repayment begins six months after graduation.

Additional information, including a financial aid brochure and approved student budgets, may be obtained by writing Coordinator of Financial Aid, Box 3005, Duke University Medical Center, Durham, North Carolina 27710.

Courses of Instruction



An asterisk placed after the course number indicates that the course is also offered in the Graduate School.

Anatomy

James B. Duke Professor: J. David Robertson, M.D. (Harvard, 1945), Ph.D. (Massachusetts Inst. of Tech., 1952), *Chairman*.

Professors: Matthew Cartmill, Ph.D. (Chicago, 1970); Sheila J. Counce, Ph.D. (Edinburgh, 1954); Harold P. Erickson, Ph.D. (Johns Hopkins, 1969); William C. Hall, Ph.D. (Duke, 1967); William L. Hylander, D.D.S. (Illinois, 1963), Ph.D. (Chicago, 1972); Richard F. Kay, Ph.D. (Yale, 1973); R. J. Reynolds Industries Professor in Medical Education Montrose J. Moses, Ph.D. (Columbia, 1949); Robert B. Nicklas, Ph.D. (Columbia, 1958); James B. Duke Professor Elwyn Simons, Ph.D. (Princeton, 1956; Oxford, 1959).

Associate Professors: Joseph M. Corless, M.D., Ph.D. (Duke, 1972); Eric L. Effmann, M.D. (Indiana, 1967); William Longley, Ph.D. (London, 1963); Ross D. MacPhee, Ph.D. (Alberta, 1977); Thomas J. McIntosh, Ph.D. (Carnegie Mellon, 1973); Michael K. Reedy, M.D. (Washington, 1962); E. Lee Tyrey, Ph.D. (Illinois, 1969).

Assistant Professors: Frank H. Bassett III, M.D. (Louisville, 1957); Nell B. Cant, Ph.D. (Michigan, 1973); M. Joseph Costello, Ph.D. (Duke, 1971); Barbara J. Crain, M.D., Ph.D. (Duke, 1978); David Fitzpatrick, Ph.D. (Duke, 1982); William E. Garrett, Jr., M.D., Ph.D. (Duke, 1976); Emma R. Jakoi, Ph.D. (Duke, 1973); Michael K. Lamvik, Ph.D. (Chicago, 1976); Chia-Sheng Lin, Ph.D. (Vanderbilt, 1976); Patricia M. Saling, Ph.D. (Pennsylvania, 1979); Frederick H. Schachat, Ph.D. (Stanford, 1974); Kathleen K. Smith, Ph.D. (Harvard, 1980).

Associate Medical Research Professors: Jane S. Richardson, M.A. (Harvard, 1966); Kenneth A. Taylor, Ph.D. (Berkeley, 1975).

Assistant Medical Research Professors: Hie Ping Beall, Ph.D. (Tulane, 1967); David A. Kopf, Ph.D. (Chicago, 1980); Richard B. Marchase, Ph.D. (Johns Hopkins, 1976); Darrell R. McCaslin, Ph.D. (Duke, 1979); Denis Raczkowski, Ph.D. (Duke, 1978); Laura Schweitzer, Ph.D. (Washington, 1979).

Lecturer: Irving T. Diamond, Ph.D. (Chicago, 1953).

Research Associates: Margaret M. Briggs, Ph.D.; Michael Cook, Ph.D.; Leonidas S. Cordova, M.S.; Gillian Einstein, Ph.D.; Walter Fowler, Ph.D.; Janet A. Hall, M.S.; Mary K. Izard, Ph.D.; Alan D. Magid, Ph.D.; Timothy O'Brien, B.S.; Pascal Picq, Docteur de 3eme Cycle; Mary C. Reedy, M.S.

Associates in Research: Hope Taylor, B.S.; William Voter, A.M.; J. Z. Young, B.A.

Emeriti: Kenneth L. Duke, Ph.D. (Duke, 1940); John W. Everett, Ph.D. (Yale, 1932).

Required Courses

During Term 1, first-year students are required to take Gross Anatomy (ANA-200), Microanatomy (ANA-201), and Neuroanatomy (ANA-202). All instruction is designed to be informal and individualized. The general principles and functional viewpoint of living anatomy are emphasized and, whenever possible, fresh tissues and living cells are used.

ANA-200. Gross Anatomy. Students dissect the entire human body except the brain. Formal classroom lectures relate structures of the human body to their

developmental and phylogenetic antecedents and the clinical significance of anatomical facts. Informal lectures are presented to small groups. Filmed lectures and prosections are available to students for laboratory and library study.

ANA-201. Microanatomy. The structural organization of different tissues and organs, as determined by light and electron microscopy, is covered in lecture. Other biochemical and biophysical studies are presented to relate structure to function, especially at the cellular level. The laboratory provides practical experience with light microscopy studies and analysing an extensive collection of prepared slides.

ANA-202. Neuroanatomy. Neuroanatomy and neurophysiology are taught concurrently to correlate these fields. Patients will be presented by faculty members in clinical neurology and neurosurgery. The major portion of the course is organized by systems, e.g., sensory, visual, auditory, olfactory, and motor including cerebellar, autonomic, hypothalamic, and limbic mechanisms.

Electives

ANA-214(B). * Anatomy of the Head and Neck. This course is designed to be a review of the head and neck, emphasizing its phylogenetic and ontogenetic development along with clinically important features of the anatomy of this region. Weight: 2. *Smith, Hylander, and Kay*

ANA-217(B). * Structure and Function of Visual Photoreceptors. A detailed study of available structural, biochemical, spectroscopic, and physiological data from retinal photoreceptors. Emphasis on molecular structure of vertebrate photoreceptor membranes, effects of bleaching on rhodopsin molecules, and initiation of neural information after photon absorption. Format to combine lectures, seminars, and demonstrations. Offered alternate years. Weight: 3. *Corless and McCaslin*

ANA-221(B). * Anatomy of the Trunk. Emphasis will be on the anatomy of the thoracic, abdominal, and pelvic organs, including relationships, blood supply and innervations, and, where practical, developmental and microscopic anatomy. The dissections will be supplemented with audiovisual presentations and discussions and with such prosections as are available. Weight: 2. *Duke*

ANA-224(B). Tutorial in Gross Anatomy. A detailed review of selected regions of the human body in the context of the core gross anatomy sequence. Student will plan, with staff, prosections, special presentations, etc. Students will elect to study one or more selected region in consultation with the staff. Weight: 1-5. *Staff*

ANA-231(B). Anatomy of Back and Extremities. Complete dissection of back and extremities, including pectoral and pelvic girdles. Visual aids will be used extensively. Course planned for orthopaedics, general practice, or neurosurgery. Weight: 3. *Bassett and staff*

ANA-259(B). * Molecular Biology I. Protein and Membrane Structure/Function. Detailed concepts of the structure and function of proteins as enzymes and as structural elements of cellular substructures, including: protein primary structure and its determination, patterns of protein folding, mechanisms of enzyme catalysis and regulation, function and formation of multimeric protein assemblies, proteins and other constituents of biological membranes. Weight: 3. *Erickson, D. Richardson, Bell, Rajagopalan, and J. Richardson.*

ANA-266(B). Comparative Neurobiology. The evolution and functional organization of the vertebrate brain. A study of the original papers of the great pioneers in evolution, neuro-psychology, and neuroanatomy. Weight: 3. *Hall and Diamond*

ANA-269(B). * Advanced Cell Biology. Structural and functional organization

of cells and their components with emphasis on current research problems and prospects. Weight: 3. *McIntosh and staff*

ANA-286(B). * Electron Microscopy and Related Techniques. Lectures and laboratories on methods of ultrastructure research. Fundamentals of optics; the light microscope, phase, polarizing, and interference microscopy. Basics of electron microscopy, staining, sectioning, and replication techniques. Optical and computer image processing. Introduction to X-ray diffraction theory and apparatus in structure biological determination. Weight: 4. *Longley*

ANA-311(B). Concepts in Cell Biology. Evaluation of models currently used to describe cell biological processes with emphasis on analysis of experimental evidence in the scientific literature. Topics include: membrane structure, cell surface interactions in development, and muscle and cell motility. Prerequisite: Permission of the instructor. Weight: 3-8. *Schachat and Jakoi*

ANA-320(B). Cell Differentiation in Development and Disease. The primary objective is to present important concepts of organization and retrieval of genetic information as they relate to storage, replication, transcription, processing, and translation of genetic information. Chromosome inactivation, gene amplification, and the impact of nucleocytoplasmic interactions on the regulation of differentiation will be considered. Transition phases of cell cycle will be discussed in regard to normal and oncogene function. Conferences will be devoted to specific examples dealing with critical aspects of differentiation involved in development of normal and disease states. The course is designed as an introduction to Hormone and Tissue Interactions in Differentiation and Disease. Weight: 2-5. *McCarty and Counce*

ANA-321(B). Hormone and Tissue Interactions in Differentiation and Disease. Hormones and other biochemical signals involved in the regulation of the differentiated state including amino acids, polypeptide and steroid hormone response in insects, snails, and higher vertebrates will be discussed in terms of the new biotechnology used to elucidate mechanisms of information transfer and gene control at the level of the chromatin. Cell-cell, cell-matrix, and hormonal interactions will be considered as control elements in development and differentiation. Interactions involving the cell surface, the basal lamina, and extracellular matrix will be discussed in terms of organization of cell populations in gastrulation and neurulation and in the differentiation of limb bud/pancreas/lymphocyte/and neural tissue. Conferences will include hormone control of sex differentiation, ectopic hormone biosynthesis, and endocrine related diseases. The course is designed as an extension of the course Differentiation in Development and Disease. Weight: 2. *K. McCarty, Sr., B. Kaurman, K. McCarty, Jr.*

ANA-340(B). * Tutorial in Advanced Anatomy. Selected topics will be chosen for intensive reading and discussion. Topics may be chosen related to basic problems of cytology, growth and development, biophysics, endocrinological control, neuroanatomy, physiological differentiation and evolutionary origins of functional microsystems. Weight: 1-3 per term. *Anatomy faculty*

ANA-354(B). * Research Techniques in Anatomy. A preceptorial course in various research methods in anatomy including electronmicroscopy. An interested student might engage in research in physical anthropology, molecular and cell biology, developmental biology, fetal physiology, or stereotactic approaches to neuroendocrinology and neuroanatomy. Recent advances in methodology are stressed. Approval of the student by the faculty is required. Weight: 4-8. *Anatomy faculty*

ANA-411(B). * Molecular and Cellular Bases of Development and Differentiation. Emphasis is placed on the biochemistry of the cell surface as the basis

of cell recognition, control of cell cycle, and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function is considered in light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The course is designed to study cellular differentiation and has been organized on a multidisciplinary level. The course is part of the lecture series of the Molecular and Cellular Basis of Differentiation Study Program. Weight: 3 and 4. *Counce, McCarty, Kaufman, and Padilla*

ANA-414(B). The Human Embryo. The first eight weeks of development are considered in detail, including fertilization, implantation, formation, and function of embryonic membranes and placenta, and establishment of major organ systems. Emphasis is placed on distinctive features of human embryogenesis, and on causes, identification, and treatment of congenital defects. Weight: 2. *Counce and Effman*

ANA-418(B). * Reproductive Biology. An indepth study of male and female reproductive processes including hypothalamic, pituitary, and gonadal control mechanisms as well as the physiology of pregnancy and parturition. Lectures by guest clinical faculty will emphasize the interface between basic science and clinical aspects. The lecture material in each section of the course is followed by seminar presentations which will contribute to ANA/PHS-424, a corequisite for the course. Also listed as PHS-418(B). * Weight: 2. *Tyrey, Anderson, and Schomberg*

ANA-424(B). * Reproductive Biology. Selected topics in reproductive biology will be chosen for in depth reading and analysis in the seminar format. The seminar is to be taken as a corequisite with ANA/PHS-418(B). Also listed as PHS-424(B). Weight: 1. *Tyrey, Anderson, and Schomberg*

Anesthesiology

Professor: W. David Watkins, M.D., Ph.D. (Colorado, 1975), *Chairman*.

Professors: Peter B. Bennett, Ph.D. (Southampton, England, 1964); Enrico M. Camporesi, M.D. (University of Milan, Italy, 1970); Kenneth D. Hall, M.D. (Duke, 1953); Merel H. Harmel, M.D. (Johns Hopkins, 1943); Joannes H. Karis, M.D. (State Univ. of Utrecht, Holland, 1952); William J. Murray, Ph.D. (Wisconsin, 1955), M.D. (North Carolina at Chapel Hill, 1962); Lloyd F. Redick, M.D. (Ohio State, 1958); Joseph G. Reves, M.D. (Med. Coll. of South Carolina, 1969); Bruno J. Urban, M.D. (Albertus Magnus, Germany, 1960); Vartan Vartanian, M.D. (Clug Univ. Med. School, Rumania, 1951); Stanley W. Weitzner, M.D. (New York Coll. of Med., 1953).

Associate Professors: Edmond C. Bloch, M.B., Ch.B. (Univ. of Cape Town, South Africa, 1946); Elisabeth J. Fox, M.B., B.S. (London Univ., 1955); Robert A. Kates, M.D. (Emory, 1977); Philip D. Lumb, M.B., B.S. (Univ. of London, 1974).

Assistant Professors: Fiona G. M. Clements, M.D. (Duke, 1975); Norbertus P. deBruijn, M.D. (University of Groningen, The Netherlands, 1976); Paolo Flezzani, M.D. (University of Bologna, Italy, 1977); John J. Frieberger, M.D. (Southwestern, 1979); Peter S. A. Glass, M.D., B.Ch. (University of Witwaterstrand, South Africa, 1976); Michael S. Gorback, M.D. (Maryland, 1979); William J. Greeley, M.D. (Texas at Houston, 1976); Robert W. Kalayjian, M.D. (California at San Francisco, 1971); John B. Leslie, M.D. (Duke, 1976); Jennie A. Mace, M.D. (Florida, 1980); Mohammad Maroof, M.D. (Liaquat Med. Coll., Pakistan, 1964); R. William McIntyre, M.D. (Univ. of British Columbia, 1970); Andrew Meyer, M.D. (New York, Downstate, 1969); Richard E. Moon, M.D., C.M. (McGill, 1973); Timothy J. Quill, M.D. (Ohio, 1980); Ziaur Rahman, M.B. (Prince of Wales Medical College, India, 1968); Roy D. Russell, M.D. (New York Med. Coll., 1977); Dianne L. Scott, M.D. (North Carolina at Chapel Hill, 1978); John Shuptrine, M.D. (Virginia, 1985); Jennifer E. Taylor, M.D. (Maryland, 1978).

Assistant Medical Research Professors: Wayne A. Gerth, Ph.D. (California at San Diego, 1979); Fritz F. Klein, Ph.D. (Duke, 1973); Sidney A. Simon, (Northwestern, 1973); Ying-Fu Su, Ph.D. (Colorado, 1978); Richard Vann, Ph.D. (Duke, 1976).

Clinical Professor: Kenneth Sugioka, M.D. (Washington Univ., 1949).

Assistant Clinical Professor: John A. Jarrell, Jr., M.D. (Johns Hopkins, 1949).

Associates: Ann G. Bailey, M.D. (Southern Illinois, 1980); Frederick J. Carpenter, Jr., M.D. (Wisconsin, 1982); Rachel A. Nunn, M.D. (Bowman Gray, 1982).

Adjunct Professor: Kwen Jen Chang, Ph.D. (New York at Buffalo, 1972).

Adjunct Assistant Professor: David M. Cocchetto, Ph.D. (Duke, 1983).

Visiting Assistant Professor: Peter S. Sebel, M.B., B.S. (Kings College, London, 1974), F.F.A.R.C.S.I. (Dublin, 1976), Ph.D. (University of Amsterdam, The Netherlands, 1981).

Visiting Associate: Terence Ludgrove, M.B., B.S. (London Univ., 1978).

Clinical Associate: Joel S. Goldberg, M.D. (Duke, 1977).

Electives

ANE-240(C). Clinical Anesthesiology. This course will be organized into two segments. During the first two weeks of this course, each student will be assigned on a weekly basis to one staff anesthesiologist who will provide for that student daily in the operating room. It will be the goal of the staff to expose the students to as many procedures (intubations, IVs, etc.) and as much intra-operative patient care as possible. In addition to this clinical work, there will be an introductory series of ten lectures offered daily at 4 p.m. covering basics such as preoperative evaluation, airway management, and the pharmacology of anesthetic agents. The second segment of this course will be as flexible as possible with students signing on for a minimum of two, but up to six weeks of electives within the department. These electives are as follows: (a.) Clinical Anesthesiology II—Essentially an extension of the initial two-week core, dealing with the enhancement of technical skills and understanding of general anesthesia dealing with orthopaedics, urology, and general surgery. (b.) Pediatric Anesthesiology—Children of all ages with varied surgical procedures. Emphasis on differences between pediatric and adult anatomy, physiology, anesthetic requirements, and management in general. (c.) Obstetric Anesthesiology—One week on Carter Ward with emphasis on indications for and management of anesthesia for labor, delivery, and C-sections. Review of local anesthetics included. (d.) Neurosurgical Anesthesiology—Management of elevated intracranial pressure, air embolism, cerebral protection, and the anesthetic implications of head injuries in the neurosurgical operating rooms. Review of regional techniques included. (e.) Cardiovascular Anesthesiology—A one to two-week course in CVT anesthesia. Will concern the student with the hemodynamic management of patients undergoing open heart surgery. (f.) SICU/Recovery—One or two weeks in the SICU and recovery room as described for ANE 241 (C). (g.) Pain Clinic—Elective dealing with the role of the anesthesiologist in a pain clinic involving observation and participation in a multidisciplinary approach to patients disabled with chronic pain. Weight: 2-8. *Watkins and staff*

ANE-241(C). SICU/Recovery. Four weeks may be spent in the SICU/Burn/Trauma Unit participating in the care of a wide variety of patients with critical surgical illnesses. The students will participate in morning and afternoon rounds with SICU attendings and residents, and will be offered lectures on aspects of critical care several times per week. Exposure to problems of management in the recovery room is provided, as well as opportunities to learn procedures and techniques necessary for the management of severely ill patients (e.g., vascular catheterization, hemodynamic monitoring, and mechanical ventilation). Weight 4. *Gorback and staff*

ANE-242(C). Anesthesiology Research. In collaboration with the faculty, the student may work on a research project related to the physiology and pharmacology of anesthetics in a laboratory or clinical setting. Weight: 8. *Watkins and staff*

Biochemistry

James B. Duke Professor Robert L. Hill, Ph.D. (Kansas, 1954), *Chairman*.

Professors: Robert M. Bell, Ph.D. (California at Berkeley, 1970); James B. Duke Professor Irwin Fridovich, Ph.D. (Duke, 1955); Samson R. Gross, Ph.D. (Columbia, 1953); Walter R. Guild, Ph.D. (Yale, 1951); Henry Kamin, Ph.D. (Duke, 1948); Norman Kirshner, Ph.D. (Pennsylvania State, 1952); Nicholas M. Kredich, M.D. (Michigan, 1962); Robert J. Lefkowitz, M.D. (Columbia, 1966); Kenneth S. McCarty, Ph.D. (Columbia, 1957); Paul Modrich, Ph.D. (Stanford, 1973); K. V. Rajagopalan, Ph.D. (Univ. of Madras, 1957); Lewis Siegel, Ph.D. (Johns Hopkins, 1965); Leonard D. Spicer, Ph.D. (Yale,

1968); Robert Webster, Ph.D. (Duke, 1965).

Associate Professors: Ronald C. Greene, Ph.D. (California Inst. of Tech., 1954); Arno L. Greenleaf, Ph.D. (Harvard, 1974); Edward W. Holmes, Jr., M.D. (Pennsylvania, 1967); Bernard Kaufman, Ph.D. (Indiana, 1961); William S. Lynn, Jr., M.D. (Columbia, 1946); David C. Richardson, Ph.D. (Massachusetts Inst. of Tech., 1967); Harvey J. Sage, Ph.D. (Yale, 1958); Deborah A. Steege, Ph.D. (Yale, 1974); J. Bolling Sullivan, Ph.D. (Texas, 1966).

Assistant Professors: Perry J. Blackshear, M.D. (Harvard, 1977); Rosalind Coleman, M.D. (Case Western Reserve, 1975); Michael Hershfild, M.D. (Pennsylvania, 1967); Tao-shih Hsieh, Ph.D. (California at Berkeley, 1976); Russell E. Kaufman, M.D. (Ohio, 1973); Salvatore V. Pizzo, M.D., Ph.D. (Duke, 1973); Allen D. Roses, M.D. (Pennsylvania, 1967); David M. Schlossman, Ph.D. (Duke, 1978), M.D. (Duke, 1979); Robert W. Wheat, Ph.D. (Washington, 1955).

Associate Medical Research Professor: Jane S. Richardson, M.S., M.S.T. (Harvard, 1966).

Adjunct Assistant Professor: Per-Otto Hagen, F.H.W.C. (Watt Univ. Scotland, 1961).

Research Associates: Wayne F. Beyer, Jr., Ph.D.; Walter R. Bishop, Ph.D.; Michel Deschuyteneer, Ph.D.; Allen E. Echardt, Ph.D.; Barry R. Ganong, Ph.D.; Barbara Hindenach, Ph.D.; Wensi Hu, Ph.D.; Jean L. Johnson, Ph.D.; Mikko Jokinen, Ph.D.; Yoichi Kawashima, Ph.D.; Thomas W. Kirby, Ph.D.; Robert S. Lahue, Ph.D.; Carson R. Loomis, Ph.D.; Javier Lopez, Ph.D.; Ann Mary, Ph.D.; Tadahiko Mashino, Ph.D.; Robert J. Mullin, Ph.D.; Sue H. Neece, Ph.D.; Pamala A. Pavco, Ph.D.; David H. Price, Ph.D.; Christopher Privalle, Ph.D.; Mark Scheidler, Ph.D.; Norman E. Tandy, Ph.D.; Brian J. Terry, Ph.D.; Moses Vijayakumar, Ph.D.; Katherine M. Welsh, Ph.D.; Elizabeth E. Wyckoff, Ph.D.; Lawrence J. Young, Ph.D.; Kathy A. Zarilla, Ph.D.; William A. Zehring, Ph.D.

Emeriti: Mary L. C. Bernheim, Ph.D.; Jerome S. Harris, M.D.; Yashiko Nozaki, Ph.D.

Required Courses

BCH-200. The core course given to all freshman medical students during a period of thirteen weeks in the first term—emphasizes the relationship between structure and function of the major classes of macromolecules in living systems including proteins, carbohydrates, lipids, and nucleic acids. The metabolic interrelationships and control mechanisms are discussed as well as the biochemical basis of human diseases.

BCH-201. The required course in genetics for all first-year students is given during four weeks at the end of the first term. The course considers the fundamental processes of heredity from a biochemical viewpoint, together with a brief survey of classical genetics to provide context for the molecular phenomena. Its purpose is to provide an adequate background to allow the student to communicate with professional geneticists and to understand the new molecular and cellular techniques for analysis of the human genome and evaluation of the genetic aspects of disease.

Electives

BCH-215(B). Molecular Genetics I: Genetic Mechanisms. A study of genetic mechanisms in molecular terms with emphasis on gene function, segregation and regulation in procaryotes and eucaryotes. The systems covered will include bacterial viruses, bacteria, plasmids, cellular organelles, and selected lower and higher eucaryotes. Course material will be drawn from the original literature and will be integrated as much as possible with Biochemistry 268. Weight: 3. *Gross and staff*

BCH-234(B). Metabolic-Genetic Disease Seminar. Diseases of metabolism studied in detail with an emphasis on human genetics and inborn errors of metabolism. Format includes staff lectures, student seminars, patient presentations, textbook and literature reading. The group will be small enough to permit maximal personal interaction, particularly between students and faculty. Weight: 3. *Kredich, Gross, Hill, and Holmes*

BCH-259(B). *Molecular Biology I. Protein and Membrane Structure/Function. Detailed concepts of the structure and function of proteins as enzymes and as structural elements of cellular substructures, including: protein primary structure and its determination, patterns of protein folding, mechanisms of enzyme cataly-

sis and regulation, function and formation of multimeric protein assemblies, proteins and other constituents of biological membranes. Weight: 3. *Vanaman, Bell, Erickson, Rajagopalan, and J. Richardson*

BCH-268(B). * Molecular Biology II. Nucleic Acids. Consideration of structure and metabolism of nucleic acids in the context of their biological function in information transfer. Emphasis will be on the current research literature. Weight: 3. *Modrich, Bastia, and Steege*

BCH-288(B). * The Carbohydrates and Lipids of Biological Systems. The subjects will be considered in the following two general categories: (1) The relationship between structure and function; particularly, (a.) cell surface carbohydrates as antigenic determinants and their relationship to viral and carcinogen transformation, (b.) connective tissue mucopolysaccharides, (c.) structural features of lipids and phase transitions. (2) Biosynthesis and catabolism. Weight: 2. *Kaufman*

BCH-291(B). * Physical Biochemistry. Principles of thermodynamics, hydrodynamics, spectroscopy, and X-ray diffraction and scattering are applied to biological systems. Biological molecules and macromolecules in both soluble and crystalline states are discussed. Weight: 3. *Richardson, Hsieh, and Sage*

BCH-297(B). * Intermediary Metabolism. Lectures and student presentations on selected topics in the areas of metabolic regulation, bioenergetics, and other subjects of current research interest in metabolism. Weight: 3. *Siegel, Bell, Hill, Fridovich, and Rajagopalan*

BCH-299(B). * Nutrition. This course will examine the experimental basis for the identification and quantitation of requirements for calories, macronutrients, and micronutrients (vitamins and minerals). It will deal with the biochemistry of nutrition, with the assessment of nutriture, and with the biological effects of deficiency or excess of nutrients. This course will seek to define optimal nutriture and will search for the factual bases (if they exist) for commonly held beliefs on the nutrition of individuals and populations. The course will consist of informal lectures and, if possible, student seminars. Weight: 2. *Kamin*

BCH-320(B). Cell Differentiation in Development and Disease. The primary objective is to present important concepts of organization and retrieval of genetic information as they relate to storage, replication, transcription, processing, and translation of genetic information. Chromosome inactivation, gene amplification, and the impact of nucleocytoplasmic interactions on the regulation of differentiation will be considered. Transition phases of cell cycle will be discussed in regard to normal and oncogene function. Conferences will be devoted to specific examples dealing with critical aspects of differentiation involved in development of normal and disease states. The course is designed as an introduction to Hormone and Tissue Interactions in Differentiation and Disease. Weight: 2. *McCarty and Counce*

BCH-321(B). Hormone and Tissue Interactions in Differentiation and Disease. Hormones and other biochemical signals involved in the regulation of the differentiated state including amino acids, polypeptide and steroid hormone response in insects, snails, and higher vertebrates will be discussed in terms of the new biotechnology used to elucidate mechanisms of information transfer and gene control at the level of the chromatin. Cell-cell, cell-matrix, and hormonal interactions will be considered as control elements in development and differentiation. Interactions involving the cell surface, the basal lamina, and extracellular matrix will be discussed in terms of differentiation of limb bud/pancreas/lymphocyte/and neural tissue. Conferences will include hormone control of sex differentiation, ectopic hormone biosynthesis, and endocrine related diseases.

The course is designed as an extension of the course Differentiation in Development and Disease. Weight: 2. *K. McCarty, Sr., B. Kaufman and K. McCarty, Jr.*

BCH-358(B). * Research in Biochemistry. In a limited number of cases, a student will be permitted to participate in the research program of a faculty member. Acceptance is by individual arrangement with the proposed faculty preceptor. Weight: 1-8 per term. *Biochemistry faculty*

BCH-360(B). Clinical Chemistry Laboratory. Medical students may participate in the program of the Clinical Chemistry Laboratory on a tutorial basis. The course is tailored to the student's particular training needs. Students must receive the permission of the instructor. Weight: 4. *Bittikofer*

Community and Family Medicine

Associate Professor: George R. Parkerson, Jr., M.D. (Duke, 1953), M.P.H. (North Carolina at Chapel Hill, 1977) *Acting Chairman.*

DIVISION OF BIOMETRY

Associate Professor: William E. Wilkinson, Ph.D. (North Carolina at Chapel Hill, 1968); *Chief.*

Professors: Thomas E. Frothingham, M.D. (Harvard, 1951); William E. Hammond, Ph.D. (Duke, 1967); Max A. Woodbury, Ph.D. (Michigan, 1948).

Associate Professors: Frank E. Harrell, Jr., Ph.D. (North Carolina at Chapel Hill, 1979); Carol C. Hogue, Ph.D. (North Carolina at Chapel Hill, 1974); Kerry L. Lee, Ph.D. (North Carolina at Chapel Hill, 1974), William W. Stead, M.D. (Duke, 1973).

Assistant Professors: Michael J. Belyea, Ph.D. (North Carolina State, 1981); Carol Bigelow, Ph.D. (Washington, 1984); Daniel G. Blazer II, M.D. (Tennessee, 1969); Shirley A. Beresford, Ph.D. (Univ. of London, 1981); Deborah V. Dawson, Ph.D. (North Carolina at Chapel Hill, 1981); Elizabeth R. Delong, Ph.D. (North Carolina at Chapel Hill, 1979); Kathryn Magruder-Habib, Ph.D. (North Carolina at Chapel Hill, 1978); Lawrence H. Muhlbauer, Ph.D. (North Carolina at Chapel Hill, 1981), Clifford H. Patrick, Ph.D. (Duke, 1971).

Medical Research Professor: Kenneth G. Manton, Ph.D. (Duke, 1974).

Research Associate: Michael Helms, B.S. (North Carolina at Chapel Hill, 1971).

DIVISION OF COMMUNITY AND OCCUPATIONAL MEDICINE

Assistant Professor: David C. Deubner, M.D. (Rochester, 1971), M.P.H. (North Carolina at Chapel Hill, 1973); *Chief.*

Professors: David M. Eddy, Ph.D. (Stanford, 1978); Clark C. Havighurst, J.D. (Northwestern, 1958); Siegfried H. Heyden, M.D. (Univ. of Berlin, Germany, 1951); Harmon L. Smith, Ph.D. (Duke, 1962); David G. Warren, J.D. (Duke, 1964).

Associate Professors: John K. Crellin, Ph.D. (Univ. of London, 1969), L.R.C.P., M.R.C.S. (Univ. of London, 1974); James F. Gifford, Jr., Ph.D. (Duke, 1969); Joseph Lipscomb, Jr., Ph.D. (North Carolina at Chapel Hill, 1975).

Assistant Professors: Deborah Bender, Ph.D., (American, 1980), M.P.H. (North Carolina at Chapel Hill, 1981); William B. Bunn III, M.D., J.D. (Duke, 1979); Allen R. Dyer, M.D. (Duke, 1972); John B. Nowlin, M.D. (Duke, 1959); Ruby L. Wilson, Ed.D. (Duke, 1968).

Associate: Catherine M. Severns, R.N.P. (Yale, 1971).

Clinical Associate Professor: George W. Jackson, M.D. (Western Reserve, 1968).

Clinical Assistant Professors: Melvin Berlin, M.D. (Duke, 1953); Joyce A. Copeland, M.D. (North Carolina at Chapel Hill, 1975); John W. Cromer, Jr., M.D. (Nebraska, 1972); Howard J. Eisenson, M.D. (Duke, 1979); Woodhall Stopford, M.D. (Harvard, 1969); Wayne R. Thomann, Ph.D. (North Carolina at Chapel Hill, 1983); Judith K. Visscher, M.D. (Washington, 1982).

DIVISION OF FAMILY MEDICINE

Professor: E. Harvey Estes, Jr., M.D. (Emory, 1947); *Chief.*

Associate Professors: Barrie J. Hurwitz, M.D. (Witwatersrand, South Africa, 1968); Robert J. Sullivan, Jr., M.D. (Cornell, 1966), M.P.H. (North Carolina at Chapel Hill, 1973), Samuel W. Warburton, Jr., M.D. (Pennsylvania, 1969).

Assistant Professors: Kathryn A. Andolsek, M.D. (Northwestern, 1975); Don W. Bradley, M.D. (Med. Coll. of Virginia, 1976); Louis C. DeMaria, Jr., M.D. (Jefferson, 1973); James L. Michener, M.D. (Harvard, 1978); Katherine A. Munning, Ph.D. (Iowa, 1979).

Clinical Assistant Professors: Walter E. Broadhead, M.D. (Duke, 1981); James N. Finch, M.D. (South Florida, 1981); Keith A. Frey, M.D. (Med. Coll. of Virginia, 1979); Joseph T. Hanlon, M.Pharm. (North Carolina at Chapel Hill, 1981); James T. Moore, M.D. (Missouri, 1971).

Clinical Associates: Hendy H. Buckley, Ph.D., (Duke, 1980); Bruce W. Goldberg, M.D. Mount

Sinai, 1982); Marci J. Kramish, M.P.H. (North Carolina at Chapel Hill, 1977); Patricia Pressley, F.N.P. (North Carolina at Chapel Hill, 1979); Valerie Profitt, R.P.A. (Bowman Gray, 1973); Lawrence Wu, M.D. (Duke, 1982).

Clinical Instructor: Joseph W. Kertesz, Jr., M.A. (Michigan, 1973).

Research Associates: James M. Schmidt, B.H.S. (Duke, 1974); William T. Vaughan, R.Ph., R.P.A. (North Carolina at Chapel Hill, 1972).

DIVISION OF PHYSICIAN'S ASSISTANT TRAINING

Clinical Assistant Professor: Reginald D. Carter, Ph.D. (Bowman Gray, 1970), *Chief*.

Clinical Assistant Professor: Michael A. Hamilton, M.D. (Rochester, 1964), *Medical Director*.

Professor: Arthur C. Christakos, M.D. (South Carolina, 1955).

Assistant Professor: Malcolm Henderson Rourk, Jr., M.D. (Pennsylvania, 1963).

Assistant Clinical Professor: Marcia E. Herman-Giddens, B.H.S. (Duke, 1978).

Clinical Associate: John C. Lord, B.H.S. (Duke, 1981); Jan Victoria Scott, B.H.S. (Duke, 1981).

Instructors: Leaf R. Diamant, M.Ed. (North Carolina at Chapel Hill, 1973); Joyce Nichols, R.P.A. (Duke, 1970).

DUKE DIET AND FITNESS CENTER

Clinical Assistant Professor: Michael A. Hamilton, M.D. (Rochester, 1964), *Chief*.

Clinical Assistant Professors: Ronette L. Kolotkin, Ph.D. (Minnesota, 1978); Sigrid J. Nelius, M.D. (Ludwig Maximilian, Germany, 1949).

Clinical Associate: Elaine S. Revis, M.A. (Case Western Reserve, 1981).

ADJUNCT FACULTY

Adjunct Professors: Mario C. Battigelli, M.D. (Univ. of Florence, Italy, 1951), M.P.H. (Pittsburgh, 1957), Chapel Hill, N.C.; Barbara S. Hulka, M.D. (Columbia, 1959), M.P.H. (Columbia, 1961), Chapel Hill, N.C.

Adjunct Associate Professors: Stephen H. Gehlbach, M.D. (Western Reserve, 1968), M.P.H. (North Carolina at Chapel Hill, 1974), University, Ala.; Richard J. Levine, M.D. (St. Louis, 1971), Research Triangle Park, N.C.

Adjunct Assistant Professors: James D. Bernstein, M.H.A. (Michigan, 1968), Raleigh, N.C.; Thomas R. Howerton, A.B. (Duke, 1946), Durham, N.C.; Ralph E. Jennings, B.S. (East Tennessee, 1955), Durham, N.C.; Lawrence E. Myers, Ph.D. (California at Berkeley, 1972), Research Triangle Park, N.C.

Adjunct Associate: Lynn C. Hartwig, M.A. (North Carolina at Chapel Hill, 1972), Hattiesburg, Miss.

COMMUNITY FACULTY

Assistant Professor: Lars C. Larsen, M.D. (New York at Syracuse, 1973); Fayetteville, N.C.

Associate: Bruce W. Blackwell, M.D. (Ohio, 1980), Fayetteville, N.C.

Clinical Professor: Donald M. Hayes, M.D. (Boman Gray, 1954), Greensboro, N.C.

Clinical Associate Professor: Charles Ellenbogen, M.D. (Chicago-Pritzker, 1964), Fayetteville, N.C.

Clinical Assistant Professors: James C. Abell, M.D. (North Carolina at Chapel Hill, 1966), Statesville, N.C.; Joseph E. Agsten, M.D. (North Carolina at Chapel Hill, 1973), Kinston, N.C.; Lawrence M. Alexander, M.D. (Duke, 1952), Sanford, N.C.; J. Powell Anderson, M.D. (Duke, 1949), Waynesboro, Va.; William G. Aycock, M.D. (Duke, 1954), Mebane, N.C.; Evan A. Ballard, M.D. (Duke, 1976), Jonesville, N.C.; Tracy E. Barber, M.D. (Temple, 1943), Lexington, N.C.; Daniel H. Barco, M.D. (Duke, 1972), Durham, N.C.; James E. Barham, M.D. (Duke, 1974), Anderson, S.C.; Ruby W. Barker, M.D. (North Carolina at Chapel Hill, 1967), Durham, N.C.; William J. Blackley, M.D. (North Carolina at Chapel Hill, 1975), Elkin, N.C.; James S. Blair, Jr., M.D. (Maryland, 1947), Wallace, N.C.; Donald E. Bley, M.D. (Duke, 1972), Fredericksburg, Va.; Susan E. Brown, M.D. (Georgetown, 1976), Durham, N.C.; Jack R. Cahn, M.D. (Pennsylvania State, 1972), Sparta, N.C.; Walker H. Campbell, M.D. (Med. Coll. of Virginia, 1963), Goldsboro, N.C.; Jane T. Carswell, M.D. (Med. Coll. of Virginia, 1958), Lenoir, N.C.; Jerry Cassuto, M.D. (New York Med. Coll., 1956), Greensboro, N.C.; Robert S. Cline, M.D. (North Carolina at Chapel Hill, 1957), Sanford, N.C.; Timothy D. Coughlin, M.D. (Cincinnati, 1972), Reno, Nev.; Bruce A. Dalton, Jr., M.D. (North Carolina at Chapel Hill, 1969), Research Triangle Park, N.C.; Charles Davant, Jr., M.D. (Med. Univ. of South Carolina, 1945), Blowing Rock, N.C.; Charles Davant III, M.D. (North Carolina at Chapel Hill, 1978), Blowing Rock, N.C.; John D. Davis, Jr., M.D., (North Carolina at Chapel Hill, 1978); Blowing Rock, N.C.; Clyde J. Dellinger, M.D. (Duke, 1961), Drexel, N.C.; John R. Dykers, Jr., M.D. (North Carolina at Chapel Hill, 1960), Siler City, N.C.; Curtis J. Eshelman, M.D. (Michigan, 1971), Durham, N.C.; Lawrence L. Fleanor, M.D., (Virginia, 1966), Big Stone Gap, Va.; John S. Gaskin, Jr., M.D. (Duke, 1959), Albemarle, N.C.; Raymond A. Gaskins, Jr., M.D. (North Carolina at Chapel Hill, 1975), Fayetteville, N.C.; Harry I. Geisberg, M.D. (Louisville, 1972), Anderson, S.C.; E. Wilson Griffin III, M.D. (Duke, 1977), Jonesville, N.C.; Albino Gomez-Uria, M.D. (Madrid School of Medicine, 1962), Asheville, N.C.;

Michael D. Gooden, M.D. (North Carolina at Chapel Hill, 1973), Goldsboro, N.C.; Wilbur J. Harley, M.D. (Jefferson, 1950), Winston-Salem, N.C.; Jeffrey S. Harris, M.D. (New Mexico, 1975), Nashville, Tenn.; James K. Hartye, M.D. (Vanderbilt, 1977), North Wilkesboro, N.C.; Francis E. Hayes, M.D. (Tufts, 1978), Concord, N.H.; Richard R. Honablue, M.D. (Meharry Med. Coll., 1974), Williamsburg, Va.; Paul O. Howard, M.D. (Virginia, 1955), Sanford, N.C.; Harold R. Imbus, M.D. (Cincinnati, 1954), Greensboro, N.C.; Peter Jacobi, M.D. (Case Western Reserve, 1979), Durham, N.C.; Lane E. Jennings, M.D. (Miami, 1975), Port Orange, Fla.; Pamela H. Jessup, M.D. (Bowman Gray, 1977), Sanford, N.C.; Eric M. Johnson, M.D. (Wayne State, 1977), Albemarle, N.C.; Lyndon K. Jordan, M.D. (Duke, 1961), Smithfield, N.C.; Hervy B. Kornegay, Sr., M.D. (Bowman Gray, 1957), Mount Olive, N.C.; Charles W. Lapp, M.D. (Albany Med. Coll., 1974), Raleigh, N.C.; Walter L. Larimore, M.D. (Louisiana, 1977), Bryson City, N.C.; Stephen C. Lies, M.D. (Duke, 1976), Goldsboro, N.C.; Richard V. Liles, Jr., M.D. (North Carolina at Chapel Hill, 1957), Albemarle, N.C.; Mary E. Lyon, M.D. (Bowman Gray, 1977), Sparta, N.C.; Robert H. McConville, Jr., M.D. (Indiana, 1972), Sanford, N.C.; Dwight G. Malone, M.D. (Jefferson, 1976), Williamsburg, Va.; Yancey Mebane, M.D. (Duke, 1954), Mebane, N.C.; Albert A. Meyer, M.D. (State Univ. of New York, 1975), Thomasville, Ga.; Robert S. Meyer, M.D. (Temple, 1974), Mount Olive, N.C.; John W. Nance, M.D. (Bowman Gray, 1948), Clinton, N.C.; Robert B. Nieland, M.D. (Iowa, 1969), Hickory, N.C.; Talbot F. Parker, Jr., M.D. (Jefferson, 1951), Goldsboro, N.C.; Melvin T. Pinn, M.D. (Virginia, 1976), Charlotte, N.C.; Eric A. Pyeritz, M.D. (Pittsburgh, 1978), Bryson City, N.C.; Calvin Reams III, M.D. (Miami, 1975), Thomasville, N.C.; David C. Rockmore, M.D. (Med. Coll. of Virginia, 1975), Statesville, N.C.; Charles P. Scheil, M.D. (Duke, 1958), Lenoir, N.C.; Evelyn D. Schmidt, M.D. (Duke, 1951), Durham, N.C.; Harold D. Schutte, M.D. (Loma Linda, 1962), Asheville, N.C.; Jessica Schorr, M.D. (Tufts, 1977), Charlotte, N.C.; Daniel J. Semenoff, M.D. (St. Louis, 1963), Fayetteville, N.C.; Robert H. Shackelford, M.D. (Bowman Gray, 1947), Cary, N.C.; Philip G. Singer, M.D. (Duke, 1975), Hillsborough, N.C.; Van J. Stitt, M.D. (North Carolina at Chapel Hill, 1975), Fayetteville, N.C.; Hal M. Stuart, M.D. (Bowman Gray, 1956), Elkin, N.C.; William B. Tarry, Jr., M.D. (Med. Coll. of Virginia, 1953), Oxford, N.C.; Richard L. Taylor, M.D. (North Carolina at Chapel Hill, 1962), Oxford, N.C.; George R. Tucker, Jr., M.D. (North Carolina at Chapel Hill, 1955), Henderson, N.C.; Beverly W. Tucker, M.D. (North Carolina at Chapel Hill, 1966), Henderson, N.C.; Christopher Unger, M.D. (Pennsylvania, 1969), Bethesda, Md.; William B. Waddell, M.D. (Duke, 1962), Galax, Va.; Joseph E. Walker, M.D., (Duke, 1960), Galax, Va.; Joseph B. Warren, M.D. (Duke, 1951), New Bern, N.C.; John W. Watson, M.D. (Med. Coll. of Virginia, 1953), Oxford, N.C.; James M. Wetter, M.D. (New York at Buffalo, 1974), Fayetteville, N.C.; Abner C. Withers, M.D. (North Carolina at Chapel Hill, 1962), Morganton, N.C.; Robert K. Yowell, M.D. (Duke, 1961), Durham, N.C.

Clinical Associates: John B. Anderson, Jr., M.D. (Cincinnati, 1980), Oxford, N.C.; Marla L. Berg-Weger, M.S. (Kansas, 1983), Fayetteville, N.C.; Robert F. Brown, M.D. (East Carolina, 1981), Sea Level, N.C.; R. Scott Eden, M.D. (Duke, 1980); Daniel Gottovi, M.D. (Rochester, 1965), Wilmington, N.C.; David C. Jones, M.D. (Duke, 1979), Mebane, N.C.; William R. Lambeth, M.D. (Bowman Gray, 1974), Durham, N.C.; Frank W. Leak, M.D. (North Carolina at Chapel Hill, 1967), Clinton, N.C.; Linda T. McAlister, M.D. (California at San Francisco, 1978), Fayetteville, N.C.; Charles F. Martin, M.D. (Louisville, 1951), Greensboro, N.C.; J. T. Newton, M.D. (North Carolina at Chapel Hill, 1981), Clinton, N.C.; Latham C. Peak, M.D. (Bowman Gray, 1951), Clinton, N.C.; Andrew W. Robertson, M.D. (Texas, 1979), Fayetteville, N.C.; John L. Rouse III, M.D. (Bowman Gray, 1973), Clinton, N.C.; Robert F. Sample, Jr., M.D. (East Carolina, 1981), Sea Level, N.C.; Thomas W. Stearns, Ph.D. (Florida State, 1980), Fayetteville, N.C.; Robert H. Taylor, Pharm. D. (Tennessee, 1977), Fayetteville, N.C.; James W. Turpin, M.D. (Emory, 1955), Fayetteville, N.C.; Allen H. Van Dyke, Jr., M.D. (Bowman Gray, 1971), Durham, N.C.; John S. Weiner, Pharm. D. (Michigan, 1982), Fayetteville, N.C.; Gregory K. Whitaker, M.D. (South Carolina, 1978), Fayetteville, N.C.

Emeriti: Leonard J. Goldwater, M.D.; Dorothy E. Naumann, M.D.; Eva J. Salber, M.D.

Required Course

CFM-205. Clerkship in Family Medicine. This basic course in family medicine consists of an eight-week clinical clerkship in the second year. The educational goal is that students understand the principles of family medicine and the application of these principles in community practice. Emphasis is placed upon the provision of continuous comprehensive health care for people of both sexes and all ages within the context of their personal social support groups in the communities where they live. Of particular importance are ambulatory care, continuity of care, management of common health problems, and health maintenance. Students also study social factors, such as the doctor-patient relationship, family dynamics, the role of the physician in the community, ethical and legal issues, and the economics of health care delivery.

The clerkship is a two-part experience, approximately half with full-time

family medicine faculty in the ambulatory health care facilities in Durham closely affiliated with the Duke University Medical Center, and the other half with practicing family physicians in communities other than Durham, but principally within North Carolina. In both components of the course the learning experience is centered upon patients which students help manage under the guidance of the departmental faculty. Patients are seen in a variety of sites, including the office, home, nursing homes, public health clinics, and community hospitals.

This experience offers the student a broad and realistic perspective of medicine and its relationship to other important institutions in the community. It also provides a basis for understanding the interdependent relationships between community and referral center physicians.

Electives

CFM-212(B). Organization and Management of Ambulatory Care Centers.

A series of seminars to discuss ambulatory care systems. Material covered will be of interest to all students who will work in an office setting. Emphasis will be placed on the group practice as a mechanism for providing ambulatory health services. Topics of discussion will include the conceptual basis for organizing ambulatory care centers; center objectives; automated subsystems for registration, appointments, diagnostic studies, health providers and managers; marketing; human relations; professional recruitment and group selection; financial forecasting and budgeting. During the second term, discussions will center around specific areas of interest with participation in direct application. Weight: 1-2. *Deubner and Kozel*

CFM-215(B).† Biostatistics in the Medical Sciences. A practical approach to statistical methods and their use in medicine and the related health sciences. Particular emphasis will be placed on issues in the design, conduct, and interpretation of clinical and epidemiologic studies. The standard statistical concepts relating to data description and hypothesis testing, including test statistics, parameters, p-values, significance levels, power, and confidence intervals will be introduced in class lectures and will be reinforced through reading selected papers from the medical literature. The proper uses of test statistics in different situations will be demonstrated. Examples from real data and the medical literature will be used extensively. The student will reproduce some results through use of the computer. Weight: 2. *DeLong*

CFM-225(B).† Digital Computers and Their Application in the Health Sciences. For students desiring an intensive exposure to medical computer applications. The flexible format of the course permits a variety of projects in computer medicine. Examples include projects in interactive patient interviewing; computer-aided instruction; patient/physician education; data collection, organization, retrieval, display, and analysis; and physician-assist programs. Weight: 1-8. *Hammond*

CFM-226(B). Historical Studies in a Medical Specialty. This elective is offered primarily to those who have made the choice of their probable career specialty. It is intended to provide an appreciation of the developments in that specialty and thereby deepen an understanding of it. While the choice of elective topic will be made on an individual basis and depend on the interests of each student, emphasis generally will be placed on specific theoretical, practical, and organizational developments since the second half of the nineteenth century. The format comprises selected readings, tutorials and student project. Weight: 1 or 2. *Crellin, Gifford, and English*

† For further information, contact the Dean for Undergraduate Medical Education.

CFM-227(B).† Medicine in America. The historical development of medical science, the medical profession, and patterns of medical care in the United States. Topics covered will include bases of authority for the practice of medicine, the standing of the physician in society, medical education, medical sects, the evolution of hospital care, medical organizations, and health care delivery systems. The history of the Duke University Medical Center provides a closing recapitulation of course themes. Additional units of credit may be earned through independent study. Weight: 1. *Gifford*

CFM-229(B).† The Development of and Perspectives on Modern Medicine. Comprising lectures, discussion, and readings, this course outlines the general history of medicine, with particular attention given to recent developments. The course will include such topics as the contributions of William Harvey, aspects of clinical diagnosis, and the evolution of key concepts in modern medicine such as cell theory, the germ theory, anticepsis, and theories of immunity. Full use will be made of the excellent resources of the Trent Collections. Additional units of credit may be earned through independent study. Weight: 1. *Gifford and Crellin*

CFM-232(B).† Medical Uses of Computers. An introductory course on applications of computers in clinical medicine. Special emphasis is given to various methods of collecting data from patients and making such data available for computer analysis. Working computer applications in several medical environments will be considered as examples, including visits to these units. The student will, in addition to the above, be taught the principles of computer programming through an exposure to a higher level computer language. Experience will include the writing of simple computer programs and hands on experience with computers and computer input and output devices. Weight: 3. *Hammond*

CFM-233(B).† Occupational Medicine. (Formerly Medicine and Industry). Student participation in projects being conducted in the Division of Occupational Medicine. Background material will be presented covering history of occupational (industrial) medicine, labor legislation, workmen's compensation and the Occupational Safety and Health Act (OSHA) of 1970. Clinical and epidemiological aspects of occupational diseases will be included, with emphasis on industrial hygiene and toxicology. Organization and administration of employee health programs will also be considered, with visits to representative establishments as part of the experience. Typical projects include such matters as evaluation of chemical exposures in the work environment, reactions of humans to chemical stress, medical evaluation of suspected cases of occupational disease. Weight: 6. *Cromer, Stopford, and Jackson*

CFM-234(B).* Seminar in Occupational Medicine and Toxicology. Seminar topics will relate to environmental hazards important in North Carolina. North Carolina has several important industries including agriculture, tobacco processing, textile manufacturing, and furniture manufacturing. Several occupational medicine physicians from local industries will be participants in this seminar series. Weight: 2. *Cromer and Stopford*

CFM-238(B).† Tutorial in Community and Family Medicine. An eight week, individually arranged experience in which the student participates in the research program of a faculty member. The subject matter, course weight, and meeting time will be arranged with the faculty member. Each student will meet regularly with the faculty preceptor and will carry out a project related to the preceptor's work. Through these discussions and project, the student will be able to develop an understanding of the discipline involved. Possible areas include management sciences, economic aspects of health care, computer technology, biostatistics, epidemiology, medical anthropology, health in the developing world, and organization of health care delivery in third world countries. Because of the variety of

projects available and the necessity of prior arrangements, it is essential that interested students consult with the instructor or staff at least one month before the beginning of the term elected. Weight: 1-8 per term. *Parkerson and staff*

CFM-240(B).† Epidemiologic Principles and Methods. Topics covered in this course include study of the distribution of disease in populations, issues in study design, data collection, and methods of analysis. Modules on the subjects of case-control, cohort, and cross-sectional studies, clinical trials, and intervention studies are presented. Epidemiologic approaches to the study of cancer, coronary artery disease, evaluation of medical care, infectious diseases, and mental illness will be covered. Methods are also introduced for assessing and dealing with bias, misclassification, and confounding. Primary reference papers serve as the main text for the course to enable students to gain facility in critical review of medical literature. Lectures will be supplemented by outside readings, seminars, and student presentations. Weight: 2. *Grufferman, Blazer, Delzell, Feussner, Hamilton, and Kimm*

CFM-242(B).† Nutrition Epidemiology. Nutrition epidemiology may be defined as the study of the role of the nutrition factor in the *causal web* of illness patterns in human populations. This course offers a systematic review of population approaches to the study of nutrition. Currently, most nutrition courses are primarily concerned with studies using *in vitro* laboratory techniques, animal models, or individual human subjects, with minimal emphasis on human population groups in their natural environments. In the course, emphasis will be placed on methods available for chronic disease epidemiologic research since most nutritional disorders in man are basically chronic. Particular attention will be directed to principles of research design and critical analyses of selected studies. It is hoped that at the completion of the course, the student will be prepared to design and conduct population-based studies on human nutrition. Weight: 1-2. *Sue Y.S. Kimm*

CFM-219(C).† Tutorial in Clinical Epidemiology. Selected topics will be chosen for reading and discussion. Major emphasis is on cardio-cerebrovascular chronic-degenerative diseases, major neoplastic diseases, and industrial cancer screening; nutrition (cholesterol, sodium, potassium, 700 cal diet, etc.) Weight: 2. *Heyden*

CFM-221(C).† The Computer Textbook of Medicine. Students will participate in the writing and updating of the computer textbook of medicine. Information contained in the initial chapter of ischemic heart disease will be used to assist in the management of patients on the cardiology service. Weight: 2 and 4. *Rosati, Pryor, Califf, Lee, and Harrell*

CFM-239(C). Community and Family Medicine Preceptorships. A preceptorship will be arranged for students to work with family physicians in community practice sites. In this way students can observe and participate in the delivery of health care to individual patients and their families within the context of the community in which they live. A wide variety of geographic locations and practice types are available. Students may study Durham County or other counties in North Carolina as well as communities in third world countries. Because of the necessity for prior arrangements with preceptors, it is essential that interested students contact the instructor as soon as possible and at least one month prior to the desired term. Weight: 4-9. *Michener and staff*

CFM-241(C).† Community Health Assessment. A tutorial in which the first term discussion will focus on various methods of assessing the health needs of a population. Particular emphasis will be given to the impact of cultural patterns of selected cultural and ethnic groups on the utilization of health services. In the

second term tutorials will be of a practical nature and/or emphasize fieldwork. Students will visit one or more agencies concerned with the delivery, planning, or evaluation of health care. Weight: 1-3. *Bender*

CFM-246(C).† Ethical Issues in Medicine. This seminar will examine ethical questions raised by modern biomedical science and technology, with special attention to their implications for primary care practitioners. It will offer both historical and systematic analysis, and attend to models of physician-patient relationships. Among topics for consideration will be ethical method; resource allocation, justice, and public policy; medical beneficence; and concepts of rights; together with selected practice-related issues (e.g., truth-telling, confidentiality, abortion, contraception, consent, definition and meaning of death, behavior modification, and the like). Weight: 1. *Smith*

CFM-247(C).† Philosophic Problems for Physicians. This seminar brings the resources of philosophy, literature, poetry, psychology, and sociology to bear on specific ethical and philosophical problems with which practicing physicians deal. The course proceeds with didactic and seminar presentations focusing on both medical-legal controversies and ethical dilemmas in the day-to-day practice of medicine. The historical as well as psychological roots of medical ethics will be explored in light of conflicting philosophies of science and medicine. The following topics will be among those offered for consideration: (1) the doctor-patient relationship and models of medicine; (2) ethical codes and laws; (3) meaning of informed consent; (4) abortion, euthanasia, eugenics, and definitions of death; (5) behavior control, psychotherapy, and psychosurgery in a free society; (6) medical judgment and medical regulations; (7) hypochondriasis, patient responsibility, and the unwanted patient; (8) professional detachment and commitment; and (9) value considerations in specialty choice. Weight: 2 or 4. *Dyer*

CFM-249(C).† Legal Issues in Medicine. A seminar which introduces participants to the basic approach of law and legal process to contemporary issues in medical care, including malpractice, hospital privileges, confidentiality, natural death, abortion and sterilization, consent/authorization for treatment, human experimentation, and peer review. Topics may be chosen by individual students. Common misconceptions about malpractice law and the rights of physicians and patients as well as the legal mechanisms for resolving disputes will be examined. Weight: 2. *Warren*

CFM-250(C).† Seminars in Clinical Nutrition. This course will provide an overview of the assessment and management of common nutritional problems in primary care. Topics will include nutritional assessment, prenatal nutrition, breastfeeding, pediatric nutrition, nutritional care of the diabetic, obesity, nutrition in geriatrics, and preventive nutrition. Weight: 1. *Kramish and Michener*

CFM-259(C). Advanced Clerkship in Family Medicine. Students will participate in the management of a wide variety of ambulatory patients at the Duke Family Medicine Center or Pickens Family Practice in Durham or in the Duke-FAHEC Family Medicine Center in Fayetteville, N.C., under the guidance of faculty family physicians. Emphasis will be placed on comprehensive continuous care, and the rational and cost-effective approach to diagnosis and treatment. Weight: 2-8. *Michener and staff*

CFM-261(C). Family Medicine Continuity Experience. Students will manage patients in the Family Medicine Center under supervision of faculty family physicians two half-days a week. Continuity of care is emphasized by providing comprehensive medical care to specific families over periods of two to eight months. Weight: 2-8. *Parkerson and staff*

CFM-262(C). Field Study in Occupational Medicine. This eight-week course

is intended to provide practical instruction in occupational medicine. It will include a minimum of sixteen hours of seminars, clinical experience in occupational medicine, a field experience at an established industrial health service, and a written analysis of an important occupational hazard within the industry. Weight 6. *Cromer and Stopford*

CFM-263(C). Relating to the Patient as a Family Doctor. Family dynamics and psychosomatic concepts are related to family medicine and primary care. Weight: 2. *Kertesz, Wu and Finch*

CFM-267(C). Team Training in Health Delivery. This course provides experience in the delivery of health care in a setting which utilizes a variety of health professionals such as physicians, physician assistants, nurses, psychologists, nutritionists, exercise physiologists, and support personnel. The student will learn the team approach in the education and treatment of patients with weight management problems associated with dysfunctional lifestyle. Direct observation, participation in clinical services, assigned readings, and tutorials are the teaching strategies used. Prerequisite: permission of instructor. Weight: 4-8. *Hamilton, Nelius, Kolotkin, Janick and Moore*

CFM-273(C).† The Ideal Physician. The elective will explore, from the perspectives of history and ethics, the concept of the ideal physician in relation to such figures as Hippocrates, Osler, and others, as well as students' and patients' conceptions of what a physician should be: technician and/or humanist. Weight: 1-2. *Dyer and medical history staff*

CFM-274(C).† The Ideal Patient. This elective will focus, using the disciplines of history and ethics, on the physician's relationship with the patient and how to deal with patients' expectations of what medicine has to offer. Topics highlighted will include the growth of medical technology, concepts of disease, psychosomatic medicine, and the medicalization of life. Weight: 1-2. *Dyer and medical history staff*

CFM-400(C). Geriatric Medicine. This elective is offered by the interdepartmental faculty of the Division of Geriatric Medicine. The student will work with faculty, fellows, and housestaff in a number of settings involved in the care of the geriatric patient. These will include the Geriatric Evaluation and Treatment Clinic (Duke), Geriatric Evaluation Unit and Clinic (Veterans Administration Medical Center), geriatric consultation services (Veterans Administration Medical Center, Durham County General Hospital, Duke), nursing home facilities, interactions with community services (Coordinating Council for Senior Citizens), home assessment, and others. Principles to be stressed will be biology and pathophysiology of aging; multiple clinical problems in the elderly; interdisciplinary team approach to evaluation, planning, and treatment; goals of maximal functional achievement and independence for the elderly. The student will participate actively in the workup and management of patients in both inpatient and outpatient settings as well as become more familiar with the problems of the elderly in the community. Familiarity with the growing literature in geriatric medicine will be encouraged and the student will participate in seminars, lectures, and team meetings at the appropriate sites including the Duke Center for the Study of Aging. Weight: 4 or 8. *Cohen, Lyles, DeMaria, List, Sullivan, Moore, Andolsek, and others*

Medicine

James B. Duke Professor: Joseph C. Greenfield, Jr., M.D. (Emory, 1956); *Chairman.*

DIVISION OF ALLERGY, CRITICAL CARE, AND RESPIRATORY MEDICINE

Associate Professor: James D. Crapo, M.D. (Rochester, 1971); *Chief.*

Professors: C. Edward Buckley, M.D. (Duke, 1954); Johannes A. Kylstra, M.D. (Univ. of Leiden,

1952); William S. Lynn, M.D. (Columbia, 1946); Harold R. Rotman, M.D. (Univ. of Toronto, 1958); Herbert A. Saltzman, M.D. (Jefferson, 1952); Herbert O. Sicker, M.D. (Washington Univ., 1948); Stephen L. Young, M.D. (California at San Francisco, 1968).

Assistant Professors: William J. Fulkerson, M.D. (North Carolina at Chapel Hill, 1977); Khalil Kariman, M.D. (Meshed, 1969); Douglas G. Kelling, M.D. (Harvard, 1972); Mark J. Knapp, M.D. (Wayne State, 1976); Neil MacIntyre, M.D. (Cornell, 1972); Claude Piantadosi, M.D. (Johns Hopkins, 1975); Lyn A. Thet, M.D. (Inst. of Med., Burma, 1971).

Assistant Medical Research Professors: Bruce Freeman, Ph.D. (California at Riverside, 1978); Juan Vergara, M.D. (Univ. of Chile, 1952).

Associate in Medicine: Wayne M. Samuelson, M.D. (Utah, 1980).

Medical Research Associates: Ling-yi Chang, Ph.D. (North Carolina State, 1982); Nelson Leatherman, Ph.D. (Michigan, 1967); Robert R. Mercer, Ph.D. (North Carolina at Chapel Hill, 1982).

DIVISION OF CARDIOLOGY

James B. Duke Professor: Joseph C. Greenfield, M.D. (Emory, 1956); *Chief*.

Professors: Victor S. Behar, M.D. (Duke, 1961); Fred R. Cobb, M.D. (Mississippi, 1964); Walter L. Floyd, M.D. (Johns Hopkins, 1954); Yi-Hong Kong, M.D. (Natl. Defense Med. Ctr., Taiwan, 1958); James B. Duke Professor Robert J. Lefkowitz, M.D. (Columbia, 1966); James J. Morris, M.D. (State Univ. of New York, 1959); Robert H. Peter, M.D. (Duke, 1961); Walter Kempner Professor of Medicine Andrew G. Wallace, M.D. (Duke, 1959); Robert E. Whalen, M.D. (Cornell, 1956).

Associate Professors: Thomas M. Bashore, M.D. (Ohio, 1972); Joseph R. Kisslo, M.D. (Hahnemann, 1967); Barbara C. Newborg, M.D. (Johns Hopkins, 1949); Edward Pritchett, M.D. (Ohio, 1971); Robert A. Rosati, M.D. (Duke, 1967); Harold C. Strauss, M.D. (McGill, 1964); Galen S. Wagner, M.D. (Duke, 1965); Robert Waugh, M.D. (Pennsylvania, 1966).

Associate Medical Research Professor: William M. Smith, Ph.D. (Duke, 1970)

Assistant Professors: Robert M. Califf, M.D. (Duke, 1978); Lawrence D. German, M.D. (Boston, 1976); Marcel Gilbert, M.D. (Laval Univ. 1966); Augustus O. Grant, M.D. (Univ. of Edinburgh, 1971); Michael B. Higginbotham, M.D. (Univ. of Melbourne, 1973); Kenneth G. Morris, M.D. (Ohio, 1972); Harry R. Phillips, M.D. (Duke, 1975); David B. Pryor, M.D. (Michigan, 1976); Richard S. Stack, M.D. (Wayne State, 1976); Gary L. Stiles, M.D. (Vanderbilt, 1975); Judith L. Swain, M.D. (California at San Diego, 1974); R. Sanders Williams, M.D. (Duke, 1974).

Assistant Medical Research Professors: Lars-Goran Ekelund, M.D. (Karolinska Instit., 1958); Philip McHale, Ph.D. (Duke, 1972); Judith C. Rembert, Ph.D. (North Carolina at Chapel Hill, 1972).

Associates: Eric Carlson, M.D. (Hahnemann, 1980); A. Alan Chu, M.D. (Duke, 1980); James A. Heinsimer, M.D. (Illinois, 1977); Tomoaki Hinohara, M.D. (Keio Univ., 1975); Mark A. Hlatky, M.D. (Pennsylvania, 1976); Daniel Mark, M.D. (Tufts, 1978); Douglas L. Packer, M.D. (Utah, 1980); Steven F. Roark, M.D. (Duke, 1978); Seth J. Worley, M.D. (Temple, 1978).

DIVISION OF CLINICAL PHARMACOLOGY

Associate Professor: James E. Nidel, M.D. (Miami, 1973), *Chief*.

Associate Professor: Thorir Bjornsson, M.D. (Univ. of Iceland, 1971).

DIVISION OF DERMATOLOGY

Professor: Sheldon R. Pinnell, M.D. (Yale, 1963); *Chief*.

Associate Professor: Sheldon V. Pollack, M.D. (Toronto, 1974).

Assistant Professors: Russell P. Hall, M.D. (Missouri, 1975); John C. Murray, M.D. (Duke, 1977); Elise A. Olsen, M.D. (Baylor, 1978).

Associates: Claude S. Burton, M.D. (Duke, 1979); Lester J. Fahrner, M.D. (Abraham Lincoln Sch. of Med., 1979).

Medical Research Associate: Saood Murad, Ph.D. (California at Davis, 1978).

DIVISION OF GASTRONTEROLOGY

Professor: Ian L. Taylor, M.B. (Liverpool School of Medicine, 1969), *Chief*.

Professors: Michael McLeod, M.D. (Duke, 1960); Malcolm P. Tyor, M.D. (Duke, 1946).

Associate Professors: John T. Garbutt, M.D. (Temple, 1962); Paul G. Killenberg, M.D. (Pennsylvania, 1963); Thomas T. Long, M.D. (Bowman Gray, 1966); Charles M. Mansbach, M.D. (New York Univ., 1963); Steven H. Quarfordt, M.D. (New York Univ., 1960).

Assistant Professors: Jacqueline C. Hijmans, M.D. (Univ. of Leiden, 1951); James K. Roche, M.D. (Pennsylvania, 1969).

Associates: Alice Johnson, M.D. (Temple, 1978); Jeffrey R. Medoff, M.D. (New York Med. Coll., 1977).

DIVISION OF GENERAL INTERNAL MEDICINE

Assistant Professor: Mark Linzer, M.D. (Johns Hopkins, 1977), *Acting Chief*.

Associate Professor: Francis A. Neelon, M.D. (Harvard, 1962).

Assistant Professors: J. Trig Brown, M.D. (Washington Univ., 1977); G. Ralph Corey, M.D.

(Baylor, 1973); John R. Feussner, M.D. (Vermont, 1973); Khin Mae Hla, M.D. (Inst. of Med., Burma, 1971).

Associates: Linda Frazier, M.D. (Mt. Sinai, 1980); Julia E. McMurray, M.D. (North Carolina at Chapel Hill, 1979); David B. Matchar, M.D. (Maryland, 1980); Nancy M. Philips, M.D. (Dartmouth, 1979); Charles S. Wehbie, M.D. (Bowman Gray, 1982); John R. Wheat, M.D. (Alabama, 1976).

DIVISION OF GERIATRICS

Professor: Harvey Jay Cohen, M.D. (SUNY, 1965); *Chief*.

Assistant Professors: Noel D. List, M.D. (New York Downstate, 1965); Kenneth W. Lyles, M.D. (Med. Coll. of Virginia, 1974).

Assistant Medical Research Professors: Elizabeth J. Colerick, Ph.D. (Cornell, 1984); Trygve O. Tollefsbol, Ph.D. (North Texas State, 1982).

Associate: Mark Currie, M.D. (Texas at Dallas, 1978).

DIVISION OF HEMATOLOGY-ONCOLOGY

Florence McAlister Professor: Wendell F. Rosse, M.D. (Chicago, 1958); *Codirector (Hematology)*.

Professor: Robert C. Bast, M.D. (Harvard, 1971); *Codirector (Oncology)*.

Professors: Andrew T. Huang, M.D. (Taiwan, 1965); John Laszlo, M.D. (Harvard, 1955); Harold R. Silberman, M.D. (Washington Univ., 1956).

Medical Research Professor: Joseph E. Sokal, M.D. (Yale, 1940).

Associate Professors: Arthur Frankel, M.D. (Illinois, 1979); Jon P. Gockerman, M.D. (Chicago, 1967); J. Brice Weinberg, M.D. (Arkansas, 1969).

Associate Medical Research Professor: W. David Sedwick, Ph.D. (Pennsylvania, 1970).

Assistant Professors: B. Alton Brantley, M.D. (Duke, 1978); Theresa Blumfelder, M.D. (Missouri, 1973); Wayne Brenckman, M.D. (Yale, 1963); Jeffrey Crawford, M.D. (Ohio, 1974); Charles S. Greenberg, M.D. (Hahnemann, 1976); Russel Kaufman, M.D. (Ohio, 1973); Roger Kurlander, M.D. (Chicago, 1971); Joseph O. Moore, M.D. (Johns Hopkins, 1970); William P. Peters, M.D. (Columbia, 1978); Marilyn J. Telen, M.D. (New York, 1977).

Assistant Medical Research Professor: Cinda M. Boyer, Ph.D. (Pennsylvania, 1980).

Associates: Gary V. Burton, M.D. (Utah, 1978); Cythia Chua, M.D. (Duke, 1979); W. Larry Gluck, M.D. (Pittsburgh, 1979); S. Spence McCachren, M.D. (Duke, 1978); Gregg A. Olsen, M.D. (Utah, 1980); George Phillips, M.D. (Duke, 1978); David M. Schlossman, M.D. (Duke, 1979).

DIVISION OF INFECTIOUS DISEASES

Professor: David T. Durack, M.B., B.S. (West Australia, 1969); D. Phil. (Oxford, 1973); *Chief*.

Associate Professors: Charles Ellenbogen, M.D. (Chicago, 1964); Harry A. Gallis, M.D. (Duke, 1967); John D. Hamilton, M.D. (Colorado, 1964); Felix A. Sarubbi, M.D. (New York, 1969).

Assistant Professors: Donald L. Granger, M.D. (Utah, 1972); John R. Perfect, M.D. (Med. Coll. of Ohio, 1975); Charles van der Horst, M.D. (Harvard, 1979).

Assistant Medical Research Professor: Dena L. Toffaletti, Ph.D. (North Carolina at Chapel Hill, 1977).

Associate: Mary E. Klotman, M.D. (Duke, 1980).

DIVISION OF METABOLISM, ENDOCRINOLOGY, AND GENETICS

Professor: Edward W. Holmes, M.D. (Pennsylvania, 1967); *Chief*.

Professor: Harry T. McPherson, M.D. (Duke, 1948).

Associate Professors: Perry J. Blackshear, M.D. (Harvard, 1977); Marc K. Drezner, M.D. (Pittsburgh, 1970); George J. Ellis, M.D. (Harvard, 1963); Jerome M. Feldman, M.D. (Northwestern, 1961); Charles Johnson, M.D. (Howard, 1963).

Assistant Professors: Warner M. Burch, M.D. (Bowman Gray, 1971); Mark N. Feinglos, M.D. (McGill, 1973).

Assistant Medical Research Professor: Bruce Lobaugh, Ph.D. (Pennsylvania State, 1981); Richard Sabina, Ph.D. (Texas A&M, 1979).

Associates: B. Titus Allen, M.D. (Duke, 1966); R. Mack Harrell, M.D. (North Carolina at Chapel Hill, 1979); K. Jean Lucas, M.D. (North Carolina at Chapel Hill, 1980).

DIVISION OF NEPHROLOGY

Professor: Vincent W. Dennis, M.D. (Georgetown, 1966); *Chief*.

Professors: James R. Clapp, M.D. (North Carolina at Chapel Hill, 1957); J. Caulie Gunnells, M.D. (South Carolina Med. Coll., 1956).

Associate Professors: William W. Stead, M.D. (Duke, 1973); William E. Yarger, M.D. (Baylor, 1963).

Assistant Professors: Peter C. Brazy, M.D. (Washington Univ., 1972); Paul E. Klotman, M.D. (Indiana, 1976); Steve J. Schwab, M.D. (Missouri, 1979).

Assistant Medical Research Professor: Ullrich Schwertschlag, M.D. (Univ. of Heidelberg).

Associates: Thomas Coffman, M.D. (Ohio, 1980); L. Darryl Quarles, M.D. (Alabama, 1979); Laura P. Svetkey, M.D. (Harvard, 1979).

DIVISION OF NEUROLOGY

Professor: Allen D. Roses, M.D. (Pennsylvania, 1967); *Chief*.

Professors: James N. Davis, M.D. (Cornell, 1965); Albert Heyman, M.D. (Maryland, 1940); James O. McNamara, M.D. (Michigan, 1968); John B. Pfeiffer, Jr., M.D. (Cornell, 1942); Donald B. Sanders, M.D. (Harvard, 1964).

Associate Professors: Barrie H. Hurwitz, M.D. (Witwatersrand Univ., 1968); E. Wayne Massey, M.D. (Texas at Galveston, 1970); C. Warren Olanow, M.D. (Toronto, 1965); S. Clifford Schold, M.D. (Arizona, 1973); Ara Tourian, M.D. (Iowa, 1958).

Assistant Professors: Andrew C. Bragdon, M.D. (Washington Univ., 1977); Christopher Clark, M.D. (Jefferson, 1973); Janice M. Massey, M.D. (Georgetown, 1978); Marvin Rozeau, M.D. (Duke, 1966); Donald Schmechel, M.D. (Harvard, 1974); Cheolsu Shin, M.D. (Alabama, 1977); Teepu Siddique, M.D. (Dow Med. Coll., 1973).

Assistant Medical Research Professor: Richard J. Bartlett, Ph.D. (Texas at Houston, 1979); Sanjeev D. Nandedkar, Ph.D. (Virginia 1983); Margaret Pericak-Vance, Ph.D. (North Carolina at Chapel Hill, 1978).

Associates: Robert Albright, M.D. (Pennsylvania, 1979); Michael Bowman, M.D. (Ohio State, 1976); James M. Gilchrist, M.D. (Loyola, 1979); Virginia Pact, M.D. (Karolinska Instit., 1977); Cynthia S. Payne, M.D. (Med. Coll. of Ohio, 1980); Rodney A. Radtke, M.D. (Northwestern, 1980).

Medical Research Associate: Doulgas Bonhaus, Ph.D. (Arizona, 1983).

DIVISION OF RHEUMATOLOGY AND IMMUNOLOGY

Frederic M. Hanes Professor: Ralph Snyderman, M.D. (State Univ. of New York, Downstate Med. Ctr., 1965); *Chief*.

Professor: Nicholas M. Kredich, M.D. (Michigan, 1962).

Associate Professors: Barton E. Haynes, M.D. (Baylor, 1973); Michael S. Herschfield, M.D. (Pennsylvania, 1967); David S. Pisetsky, M.D. (Albert Einstein, 1973).

Associate Medical Research Professor: George Cianciolo, Ph.D. (Miami, 1977).

Assistant Professors: Nancy B. Allen, M.D. (Tufts, 1978); David S. Caldwell, M.D. (Bowman Gray, 1967); Deborah C. German, M.D. (Harvard, 1976); Richard P. Polisson, M.D. (Duke, 1976); John R. Rice, M.D. (Miami, 1968).

Assistant Medical Research Professors: Thomas J. Palker, Ph.D. (Connecticut, 1982); Kay H. Singer, Ph.D. (Duke, 1977).

Associate: Andrew J. Laster, M.D. (Johns Hopkins, 1976).

Medical Research Associate: Margrith W. Verghese, Ph.D. (Iowa, 1964).

ADJUNCT FACULTY

Professors of Experimental Medicine: Pedro Cuatrecasas, M.D. (Washington, 1962); Robert A. Maxwell, Ph.D. (Princeton, 1954); Charles A. Nichol, Ph.D. (Wisconsin, 1949).

Adjunct Professor of Medicine: David W. Barry, M.D. (Yale, 1969).

Adjunct Associate Professor of Experimental Medicine: S. Duk Lee, Ph.D. (Maryland, 1961).

Adjunct Assistant Professors of Medicine: Gary E. R. Hook, Ph.D. (Victoria, 1968); Richard Kent, M.D. (California at San Diego, 1975); Thomas L. Wenger, M.D. (Boston, 1971).

Adjunct Assistant Professor of Experimental Medicine: John J. O'Neil, Ph.D. (California at San Francisco, 1974).

Adjunct Associate in Medicine: Joan L. Drucker, M.D. (Virginia, 1980).

CLINICAL FACULTY

Clinical Professor: Robert A. Gutman, M.D. (Florida, 1962), Durham, N.C.

Associate Clinical Professors: Robert S. Gilgor, M.D. (Pennsylvania, 1962), Chapel Hill, N.C.; Harold L. Godwin, M.D. (Harvard, 1947), Fayetteville, N.C.

Assistant Clinical Professors: William S. Abernathy, M.D. (Columbia, 1969); Durham, N.C.; Syed Ahmed, M.D. (Dow Med. Coll., 1967), Danville, Va.; John T. Baker, M.D. (Harvard, 1971), Durham, N.C.; Franc A. Barada, M.D. (Virginia, 1971), Durham, N.C.; Robert A. Buchanan, M.D. (Bowman Gray, 1969), Durham, N.C.; Edwin Cox, M.D. (Duke, 1971); Walter E. Davis, M.D. (Duke, 1966), Durham, N.C.; Lewis D. Elliston, M.D. (Baylor, 1969), Asheville, N.C.; Richard B. Everson, M.D. (Rochester, 1972), Research Triangle Park, N.C.; Albino Gomez-Uria, M.D. (Madrid Sch. of Med., 1962), Asheville, N.C.; Gloria F. Graham, M.D. (Bowman Gray, 1961), Wilson, N.C.; Michael C. Hindman, M.D. (Illinois, 1973), Durham, N.C.; H. LeRoy Izlar, M.D. (Duke, 1948), Durham, N.C.; Elizabeth Kanof, M.D. (New York Univ., 1960), Raleigh, N.C.; James R. Kelly, M.D. (Duke, 1970), Durham, N.C.; Thomas J. Maley, M.D. (New Jersey, 1970), Asheville, N.C.; D. Edmond Miller, M.D. (Duke, 1956), Durham, N.C.; William S. Ogden, M.D. (Med. Coll. of Georgia, 1965), Danville, VA; Frank S. Pancotto, M.D. (Chicago, 1975), Concord, N.C.; Jesse Roberts, M.D. (Louisiana, 1961), Winston-Salem, N.C.; Mehrdad M. Sahba, M.D. (Isfahan Faculty of Med., Iran, 1957), Durham, N.C.; John B. Simpson, M.D. (Duke, 1973), Woodside, CA; Abe Walston, M.D. (Duke, 1963), Durham, N.C.; Edward S. Williams, M.D. (North Carolina at Chapel Hill, 1954), Durham, N.C.; James O. Wynn, M.D. (Cornell, 1951), Chapel Hill, N.C.

Clinical Associates: Martha J. Bennett, M.D. (Virginia, 1976), Durham, N.C.; David R. Bishop, M.D. (Michigan, 1978), Durham, N.C.; Garrett Bressler, M.D. (Duke, 1978), Durham, N.C.; Alexander Chiamonti, M.D. (Michigan, 1976), Cary, N.C.; George W. Crane, M.D. (Northwestern, 1946), Durham, N.C.; Walter C. Fitzgerald, M.D. (Virginia, 1943), Danville, VA; Leon W. Geary, M.D. (Texas Tech., 1975), Durham, N.C.; Bonnie Goodwin, M.D. (Dartmouth, 1977); Stanley Levy, M.D. (Georgetown, 1971), Durham, N.C.; Emmett S. Lupton, M.D. (New York Univ., 1938), Greensboro, N.C.; Stuart H. Manning, M.D. (Duke, 1976), Durham, N.C.; Patricia M. Mauro, M.D. (Cornell, 1977); Durham, N.C.; Mark A. Powers, M.D. (Dartmouth, 1977), Durham, N.C.; Jack G. Robbins, M.D. (Duke, 1948), Durham, N.C.; Manfred Rothstein, M.D. (Duke, 1974), Fayetteville, N.C.; Nancy Post Schecter, M.D. (Duke, 1979), Raleigh, N.C.; Michael B. Shipley, M.D. (Duke, 1974); Durham, N.C.; William V. Singletary, Sr., M.D. (Duke, 1943), Durham, N.C.; William V. Singletary, Jr., M.D. (Duke, 1975), Durham, N.C.; Robert B. Stewart, M.D., (West Virginia, 1974); Durham, N.C.; Raymond J. Toher, M.D., (Duke, 1974), Durham, N.C.; William F. Uthe, M.D., (Med. Coll. of Ohio, 1974), Durham, N.C.; Abdolazim Vaezy, M.D. (Tehran Univ. 1969), Asheville, N.C.; Ann Elise Weinrich, M.D., (Med. Univ. of South Carolina, 1978), Durham, N.C.; William J. Wysor, M.D. (Virginia, 1950), Chapel Hill, N.C.

Emeriti: J. Lamar Callaway, M.D.; A. Derwin Cooper, M.D.; James P. Hendrix, M.D.; Walter Kempner, M.D.; Grace P. Kerby, M.D.; Edward S. Orgain, M.D.; Ernst Peschel, M.D.; Ruth L. Peschel, M.D.; R. Wayne Rundles, M.D.; Eugene A. Stead, Jr., M.D.

Required Courses

MED-204. Introduction to Clinical Methods: This course occurs over a six week period in late summer following the completion of the first year basic science curriculum. It is a short but intensive course designed to provide the student with the necessary skills and knowledge basic to function in a clinical environment. The three major areas that are covered include: (1) history, physical examination, problem formulation; (2) laboratory diagnosis, and (3) radiology diagnosis. In each of these three areas, didactic materials are presented in a morning lecture format and are complemented by afternoon sessions in smaller groups with "hands on" experience. The interterm also includes a brief introduction to the topic of human sexuality.

The morning lectures, in part, concentrate on various organ systems and outlining the salient historical features of normality and disease as well as the physical examination features pertinent to the organ system. Two afternoons each week, the students break up into small groups (four to five students) and, interacting with one instructor, interview, examine, present, and write up patients from the wards at Duke and the VA Medical Centers. During these patient oriented sessions, skills and techniques necessary for history taking, physical examination, bedside presentations, problem formulation, and writing up findings are introduced and practiced.

The purpose of the laboratory diagnosis portion of the course is to teach the concepts and technical skills necessary for the use of the laboratory in evaluating and managing patients. The course consists of a series of morning lectures and afternoon laboratory sessions stressing the intelligent use of the laboratory in clinical medicine and presented in a disease-oriented format. The lectures summarize difficult topics not easily gleaned from reading the background materials or handouts. The laboratory sessions are designed to serve two purposes: to allow acquisition of the basic psychomotor laboratory skills needed routinely in clinical medicine, such as venipuncture, cell counting, performance of ECGs and microscopic examination of urine and blood; and to provide an opportunity for small instructor-led groups to discuss the basis of particular laboratory tests and to the application of actual laboratory data to clinical practice.

The aim of the radiology diagnosis portion of the course is to introduce students to the radiographic appearances of common diseases that they will encounter during their clinical years. The principles rather than the details of radiographic interpretation are stressed in a series of morning lectures and afternoon laboratories sessions. In general, two lectures are devoted to each subspecialty area, e.g., chest radiology and neuroradiology, and these are usually scheduled to

coincide with the corresponding lectures in physical and laboratory diagnosis. The laboratories are given to groups of fifteen to twenty students, and involve discussion of radiographs at the viewbox. The labs are generally designed to amplify and extend the content of the lecture material. The emphasis is on an informal discussion with considerable interaction of teacher and students. Most of the course material is related to the analysis of radiographs from the basic areas of radiology (chest, bone, gastrointestinal, urologic, and pediatric); with less emphasis on the more specialized areas (neuro, vascular, ultrasound, computed tomography, and nuclear medicine). Students will be expected to develop an understanding of how to analyze the common basic radiographic abnormalities that they will see during their second year in clinical clerkships. The limited introduction to the more specialized areas provides information as to how the new imaging modalities should be applied in the diagnostic investigation of patients. The human sexuality portion of the course provides a didactic introduction to the psychological and physiologic aspects of sexual response and sexual dysfunction that are commonly encountered in clinical practice. The treatment of sexual dysfunction, with emphasis on behavioral methods, along with other approaches to marital and sexual dysfunction are also discussed.

At the end of the interterm, the students are tested via a written examination in radiology, a practical examination in laboratory medicine and both a written and oral practical examination in various aspects of the history, physical examination, and formulation of data into problem lists. Also contributing significantly to the final evaluation is individual student performance during the afternoon ward and laboratory sessions.

MED-205. Medicine. The second year course in medicine is aimed at providing the student with the basic tools used in the practice of medicine. This is the time when he or she should consolidate the material learned during the first year and apply it to the study of his or her own patients. During a brief eight-week course it is not possible to cover systematically the entire body of knowledge of internal medicine; instead, the student is provided a series of representative learning experiences based on the case study method. Our goals are to teach a method of approach to the patient and to provide a firm foundation for the solution of new medical problems as they are encountered in the months and years ahead. Specific expectations of the sophomore student are: (1) The student will perform and record a history and physical examination on each patient he or she admits. The first two weeks on the rotation the student will admit two patients per week; thereafter he or she will admit three patients per week. (2) The student will perform an independent history and physical examination on the patient. After the resident has completed the patient assessment, the student should present to the resident. They should then go back to the bedside to check any discrepancies in either the historical or physical examination findings. The resident will review the workup and discuss the presentation of the patient with the student on the night of admission or at a time before formal patient presentation. (3) A complete work-up will also include an analysis of the peripheral blood smear and urine sediment on all patients. (4) The student should prepare for case presentations by reading the relevant section in one of the standard textbooks of medicine. (5) The student's complete workup should be in the chart within twenty-four hours of admission and should be in the format provided. (6) The student should take responsibility for patients as the primary care person and is expected to follow his or her patients daily and include progress notes on the chart. He or she is responsible for knowing what therapeutic interventions and/or diagnostic tests have been performed and the outcome of these maneuvers. (7) The student is encouraged to participate in all diagnostic procedures, such as lumbar punctures or thoracenteses, on his or her patients. Where appropriate, the student will per-

form these procedures under the supervision of the house staff. (8) Daily work rounds with the house staff are mandatory and the student is expected to be sufficiently knowledgeable to participate in patient care decisions. Attending rounds cannot be missed without the prior permission of the attending physician. (9) The student is expected to present patients to attendings within twenty-four hours after admission and to know rationale for patient workup as well as pertinent specific medical information. (10) There will be an oral examination for all second year students during the final week of the rotation. The student will be expected to demonstrate skills in taking histories and performing physical examinations. (11) Students should attend all conference (noon, chief resident's, etc.) unless ward duties preclude.

Electives

MED-210(C). Advanced General Medicine: Duke/Durham Veterans Administration Medical Center. Course Goals: To expand the experience and knowledge gained during the second year medicine clerkship by: (1) Primary—Providing additional experience in the management of hospitalized patients with a wide variety of general internal medical problems. (2) Secondary—Developing a comprehensive understanding of the pathophysiology of the common problems encountered on an internal medicine inpatient service. How Goals Will Be Achieved: Students will be assigned to one of the general medical wards at either Duke or the Veterans Administration Medical Center. They will be assigned patients in rotation with the second-year students on the service and will be expected to perform and complete an initial evaluation, develop a care plan, write the orders (to be countersigned by the intern), present the patient at teaching rounds and follow the patient throughout the hospital course. Students will be assigned approximately three patients per week and will be expected to do outside reading on each. The student may be advanced to the subinternship level during the eight-week period on the recommendation of the chief medical resident. Methods of Evaluation: Students will be evaluated by their intern, resident, and senior staff attending. The evaluation form will be made available to each student at the beginning of the rotation. No final exam is given. Weight: 8. *Greenfield and staff*

MED-211(C). Internal Medicine Subinternship: Duke/Durham Veterans Administration Medical Center/ Durham County General Hospital. Course Goals: To provide an internal medicine patient care experience at the intern level. This course is primarily recommended for the individual who performed at honors level in the second year internal medicine and who either had a prolonged period of time since that experience or is planning an internship in an area other than internal medicine. How Goals Will Be Achieved: Students will be assigned to one of the two inpatient services at either Duke, DVAMC, DCG hospitals supervised by a second or third year internal medicine resident. The student will function as an intern on that service with the exception that orders must be countersigned by a medical house officer. No other medical intern will be assigned to those patients handled by the subintern. The number of patients assigned will be determined by the supervising resident with anticipated increases during the four week period. Methods of Evaluation: Students will be evaluated by their resident and senior staff attending. The evaluation form will be made available to each student at the beginning of the rotation. No final exam is given. Prerequisite: available only to Duke medical students who receive honors or pass+ in MED-205 or by special permission. Weight: 4. *Greenfield and staff*

MED-212(C). Tutorial in General Internal Medicine. Course goals: (1) Primary—to expand exposure to general internal medicine. (2) Secondary—to focus and develop physician-patient interactive skills using private in- and outpatients. How

Goals Will Be Achieved: Students will work in a one-to-one relationship with one of the faculty members of the Division of General Internal Medicine involved in the daily care of patients. Activities include working up and developing plans for evaluation and therapy as well as presenting inpatients and outpatients in the Medical PDC. This eight-week offers an expanded opportunity for exposure to general internal medicine problems. Methods of Evaluation: The preceptor will observe the student's interaction with patients and the quality of the work-ups including the follow-up care plans and their implications. Prerequisites: approval of the students by preceptor. Weight: 4. *Neelon and Feussner*

MED-220(C). Emergency Room. Course Goals: (1) Primary—provide a broad exposure to clinical problems encountered in the emergency room in such a way that patients are seen before any other physician contact allowing students to make diagnoses and plan short-term work-ups. (2) Secondary—gain in ability to rapidly obtain history; shortening of time required to do accurate physical examination; enhancement of dexterity in performing minimally invasive procedures. How Goals Will Be Achieved: Each student works in conjunction with one team of two residents, that is, on twenty-four hours/off twenty-four hours, then on twelve hours/off thirty-six hours. Students will sleep in every fourth night and average working about seventy hours per week. In collaboration with the medical resident, the student will be involved in diagnostic procedures and interpretation of studies before planning the management of illness with some opportunities to treat patients for up to twenty-four hours. Thus, the students can test their ability to make diagnoses and plan subsequent acute studies. Didactic sessions, held twice weekly, cover clinical topics relative to emergency medicine. Students electing the eight-week experience will double their experience in acute care medicine including practice in diagnostic skills and psychomotor coordination in procedures and work with two different resident teams. Methods of Evaluation of Student Performance: Residents and senior staff will evaluate the student's gain in rapidity of doing history/physical examinations, increased dexterity in performance of minimally invasive procedures, and increase in knowledge and skill to interpret/present studies. Prerequisites: none are mandatory; prior experience in other electives will be beneficial. Weight: 4 or 8. *Silberman*

MED-223(C). Intensive Care Subinternship, Duke. Course Goals: (1) Primary—to introduce the student to a pathophysiologic approach to critically ill adults. (2) Secondary—to provide an opportunity for students to perform selected procedures. How Goals Will Be Achieved: Students will function as subinterns in a very active intensive care unit. Patient evaluations, procedures, diagnostic planning and treatment planning are performed by students under the direct supervision of the junior assistant resident, pulmonary fellow, and attending physician. Night call occurs every other or every third night. Regular didactic lectures on topics related to the diagnosis and treatment of the critically ill will be given by the attending staff. The physiological and biochemical approach to critical care medicine is stressed. Emphasis is placed on access to attending physicians and pulmonary fellows for the discussion of specific patient-oriented questions. Preferences for the month of rotation will be honored if possible. Questions should be directed to Dr. Fulkerson, 681-5850. Methods of Evaluation: each student's performance is assessed by the unit director through direct observation of the student in the clinical and didactic environments. Input from the residents, fellows, and other attending physicians is also obtained. Weight: 4. *Fulkerson and pulmonary staff*

MED-224(C). Intensive Care Medicine, Durham Veterans Administration Medical Center. Course Goals: (1) Primary—to provide training in clinical physiologic and pharmacologic principles of the care of the critically ill. (2) Secondary—to develop skill in performance and interpretation of diagnostic procedures. How Goals Will Be Achieved: Under the supervision of junior assistant residents and a

pulmonary fellow, the student will function as a subintern and will be responsible for patient workups and daily bedside presentations. Students will be given responsibilities for procedures and decision-making in direct proportion to the development of their patient management skills. Daily attending rounds stress an integrated physiologic approach to the management of critically ill patients with emphasis on acute respiratory care, hemodynamic monitoring acid-base balance and nutritional support. Each student will be provided with a syllabus of selected readings which will supplement regular didactic sessions on diagnoses, pathophysiology, and management of critical illness. Students will be on call every third night for the duration of this four-week course. Students may obtain information by telephoning 286-0411, ext. 6648 or 6195, and should arrange for a replacement if they subsequently drop the course. Methods of Evaluation: Student evaluations are done by the fellows and faculty at tending on the MICU and are based on observed performance. Weight: 4. *Piantadosi and Pulmonary Staff*

MED-230(C). Allergy and Respiratory Diseases. Course Goals: (1) Primary—to provide training in clinical aspects of allergy and respiratory medicine. (2) Secondary—to provide experience with pulmonary and allergy laboratory techniques including pulmonary function testing, chest radiology, bronchoscopy and evaluation of allergic disorder. How Goals Will Be Achieved: Students will be assigned to the pulmonary/allergy consult services at either the Veterans Administration Medical Center or Duke Hospital. They will have primary responsibility for workup and presentation of selected patients on these services. All patients are presented and followed at daily rounds with fellows and faculty. Students will also participate in a half day outpatient clinic each week. Joint seminars and conferences involving both the Duke and VAMC consult services are held each week to provide instruction in allergy, clinical immunology, pulmonary function evaluation, pulmonary physiology, chest radiology, pulmonary pathology and clinical pulmonary medicine. Methods of Evaluation: Student evaluations are done by fellows and faculty assigned to the consult services during the period of the course and are based on observed performance. Weight: 4. *Crapo and Pulmonary Staff*

MED-231(C). Clinical Allergy-Immunology. Course Goals: (1) Primary—familiarization of the student with the clinical uses of the allergy-immunology laboratory. (2) Secondary—precepted instruction in the logical use of clinical and basic laboratory information in patient care. How Goals Will Be Achieved: The consultative role of the allergy-immunology laboratory is used as a focus to gain a critical awareness of the clinical utility and pitfalls of immunoserologic information. During the first several weeks the student will clinically evaluate selected patients with impaired immunity (impaired resistance to infection, hypersensitivity, autoimmunity, neoplasia, or other immunologic problems) from the clinic and/or consultative service. The student will have an opportunity to participate in the immunoserologic studies applicable to assigned patients. This experience is used to identify a mutually acceptable topic for selected readings and weekly discussions of either a laboratory procedure or immunologic alterations associated with an immune disease. These readings and discussions provide the substantive basis for a required technical report. The content of this short critical summary of current knowledge is focused on the utility of either a specific laboratory procedure or the value of laboratory studies in the care of patients with a specific immune disease. Methods of Evaluation: the student's understanding of and ability to use the information gained in the care of the patients and the content of the technical report are used to evaluate performance. Prerequisite: approval of the course director. Weight: 8. *Buckley*

MED-232(C). Pulmonary Medicine Subinternship (Asheville V.A.). Course Goals: (1) Primary—experience in management and assessment of pulmonary diseases. (2) Secondary—exposure to and assistance in special procedures in pulmonary medicine, such as PFTs, arterial punctures, thoracentesis and bronchoscopy. How Goals Will Be Achieved: Students will perform the initial work up on selected patients admitted to the pulmonary service at the Asheville Veterans Administration Medical Center and participate in patient centered daily work rounds and weekly chest conferences. In addition, there will be informal lectures on pulmonary subjects such as history taking, physical examination, PFTs and arterial blood gases (theory vs. practice), chest radiography, COPD and asthma, lung cancer, pneumonias, pulmonary TB, pulmonary emboli, occupational lung disease, respiratory failure, and pleural effusion. Optional activities may include participation in a pulmonary clinic and general medical night call. Method of Evaluation: The instructor evaluation will be based on observation of the student's daily performance using the standard Duke Department of Medicine evaluation form. Weight: 4. *Vaezy*

MED-240(C). Clinical Cardiology. Course Goals: (1) Primary—to develop proficiency in obtaining and understanding the cardiovascular history and bedside examination and interpreting a routine electrocardiogram and chest X-ray. (2) Secondary—to develop an understanding of the pathophysiology of heart disease, the use of noninvasive (echo, exercise testing, radionuclide studies, and Holter monitoring) and invasive (cardiac catheterization) technologies in patient evaluation, the use of data banking in epidemiologic research and patient management and the role of the cardiovascular consultant in patient evaluation and management. How Goals Will Be Achieved: All students will have a core curriculum of didactic lectures and patient and cardiology patient simulator (HARVEY) laboratory sessions occurring from 11 A.M to 1 P.M. each day throughout the eight weeks and will also participate in two four-week patient centered experiences: a clinical evaluation subrotation, and a patient care subrotation. During the clinical evaluation subrotation, the student will be assigned to either Duke or the VAMC and will be responsible for interpreting electrocardiograms, performing cardiology consultations, and evaluating patients in preparation for cardiac catheterization. During the other four-week experience, the students will be assigned to either Duke, VAMC, or DCG Coronary Care Unit, or to a private attending cardiologist as a subintern. On the CCU, the student will work in close cooperation with house staff and in the evaluation and management of patients with acute cardiovascular illnesses. As a subintern, the student will be responsible for evaluation and management of patients in concert with the intern, fellow, and senior staff physician. An opportunity to certify/recertify in basic cardiac life support will also be offered. Students wishing to drop this elective must do so at least two weeks prior to the starting date. Subsequently, no drop will be permitted unless the student provides a replacement for that slot. Methods of Evaluation: students will be evaluated by all resident and senior staff with whom they work. The evaluation questionnaire will be made available to the student at the beginning of the clerkship. At the end of the course, students will also be objectively evaluated by a written test and by a practical examination on the cardiology patient simulator. Weight: 8. *Waugh and cardiology staff*

MED-241(C). Preventive Cardiology: Clinical Applications. Course Goals: (1) Primary—to teach students the clinical applications of newer knowledge of preventive cardiology. (2) Secondary—to teach students how to assess their own cardiovascular risk status and means for its modification. How Goals Will Be Achieved: The course is given once every eight weeks (except for the Spring 1986 term) and is organized around weekly didactic sessions and discussions of clinical cases. In addition, problem sets and a comprehensive reading list augment the

classroom session. Several Duke faculty members as well as outside speakers from different clinical disciplines participate in the course. Some of the topics discussed include "risk factor" modification (such as clinical management of hyperlipidemia and hypertension, behavior modification, and smoking); secondary prevention by early diagnosis of coronary artery disease (CAD) using new technologies; tertiary prevention by maximum rehabilitation. Such issues as the pros and cons of surgical vs. medical approaches to CAD are examined not only in terms of scientific knowledge but also in economic terms. Methods of Evaluation: (1) quality of the student's classroom discussions demonstrating the extent of prior reading and (2) an examination. Weight: 1. *Kimm and guest speakers*

MED-242(C). Clinical Arrhythmia Service. Course goals: (1) Primary—to provide students with an in-depth exposure to the diagnosis and management of cardiac arrhythmias, electrophysiologic studies, and cardiac pacemakers. This course is not designed to be a substitute for the general cardiology elective (240C). (2) Secondary—to familiarize the student with certain basic techniques of arrhythmia diagnosis such as esophageal recording and pacing. How goals will be achieved: the student will spend four weeks working on the clinical arrhythmia service under the direct supervision of either Dr. Lawrence German or Dr. Marcel Gilbert. The student will make rounds with the clinical electrophysiology service on inpatients with arrhythmia problems. The student will attend electrophysiologic studies and assist in the analysis of data from these studies. The student will be responsible for the work-up of patients admitted to the arrhythmia service as well as inpatient consults, and will play an important role in the followup of these patients while they are in the hospital. The student will also see outpatients during arrhythmia clinic that meets Wednesday afternoons in the PDC. The student will assist in the evaluation of patients for permanent pacemaker implantations. Students will be responsible for reviewing the literature on subjects related to the patients that they have seen on the clinical service. Methods of Evaluation: Students will be evaluated on their clinical skills in taking histories, performing physical examinations, as well as in their presentation and assessment of the patient's problem. They will also be assessed on their ability to read and understand the relevant literature, and they will be assessed on their ability to assume a responsible role in the operation of the clinical arrhythmia service. Weight 4. *German and Gilbert*

MED-243(C). Cardiology Subinternship (Asheville Veterans Administration Medical Center). Course Goals: (1) Primary—to provide experience in the assessment and management of patients with acquired heart disease. (2) Secondary—the familiarization of the student with both invasive and non-invasive procedures available at this medical center. How Goals Will Be Achieved: The student will be assigned to an attending cardiologist and be expected to work up patients presenting to both the coronary care unit and the cardiology nonacute ward. Daily work rounds will commence at 7:30 A.M. with teaching rounds beginning at 3:30 P.M. on Monday, Wednesday and Friday. In addition, daily interpretation of electrocardiograms, stress tests, Holter monitors and echocardiograms will focus on student teaching. Cardiac catheterization results will also be reviewed on a daily basis as well as summarized in a weekly cardiac surgery conference. Night call will be optional, but students may elect to take call with appropriate attendings. Method of Evaluation: The preceptor will evaluate the student's ability to assess patient problems based on the history and physical and formulate a plan to evaluate the problems. Furthermore, the preceptor will assess each student's ability to evaluate and act upon data derived from both invasive and non-invasive diagnostic methods. Weight: 4. *Maley*

MED-250(C). Clinical Dermatology. Course Goals: (1) Primary—to become

familiar with the pathophysiology and clinical assessment and management of common outpatient dermatological problems. (2) Secondary—to become cognizant of the appropriate dermatological evaluation and treatment of hospitalized patients and those with unusual or rare skin disorders. How goals Will Be Achieved: Students will be integrated into the dermatology program for one month. They will attend public and private outpatient clinics at the Duke Medical Center and the VA Medical Center. They will participate in inpatient teaching rounds, the clinical diagnostic conference, pathology conference, and basic science seminars. Time will be allotted for viewing dermatological teaching tapes as well. Methods of Evaluation: dermatology attendings at Duke and the VA Medical Centers will assess the students' motivation and dermatologic diagnostic skills. Weight: 4. *Dermatology staff*

MED-251(C). Lectures and Demonstration in Clinical Dermatology. Course Goals: The primary goal is to become familiar with the clinical presentation and pathophysiology of dermatological disorders and their management and treatment. How Goals Will Be Achieved: The course will be presented over an eight week period with three lectures weekly, using 35mm. Kodachromes. Clinical assessment will be emphasized by presentation of patients with common, as well as unusual, skin disorders one half day per week. Methods of Evaluation: As this is a lecture and demonstration course only, a test given at the end of the course will be used to assess knowledge gained. Weight: 2. *Dermatology staff*

MED-260(C). Gastroenterology. Course Goals: (1) Primary—to provide experience with digestive diseases from which the student can develop a sound fundamental approach to the diagnosis and management of these problems and to enable scholarly growth from subsequent experience. (2) Secondary—to provide an environment that will stimulate questions concerning digestive diseases and attract students with a research interest into the field. How Goals Will Be Achieved: Participation in the care (work-up and management) of at least five patients each week hospitalized on the general wards of Duke or VA Medical Centers or on the gastroenterology unit at Duke North under the guidance of the resident and fellowship staff and under the direction of faculty members assigned either to the VAMC Consultation Service, Duke North Inpatient Service, or Duke North Private and Public Patient Consultation Services. The students' experience may include direct participation in the activities of the clinical laboratory of the Division of Gastroenterology. This laboratory offers over 35 specialized tests and/or procedures necessary for the state of the art care of patients with digestive diseases; for example, biochemical tests include measurements of gastric secretion and analysis of dietary fat absorption, immunoassays include measurements of serum gastrin and trypsin, procedural activities range from upper endoscopy and endoscopic retrograde cholangiopancreatography to endoscopic colon polypectomy and endoscopic ampulla of Vater papillotomy. Morphologic and physiologic data derived from these and other laboratory studies are discussed in the context of specific patient problems in several weekly rounding and conference settings. Students have an opportunity to interact with all the faculty of the division at morning rounds and other conferences where patients from all of the services (Duke and VAMC) are discussed. Rounds on patients with liver disease are held separately twice weekly with participation by students on all services. Methods of Evaluation: Student evaluation forms are completed by the resident, fellows and faculty working with the student on individual patient care services. Final evaluation represents a composite of these forms that chiefly identify clinical skills, fund of basic information, organizational ability and degree of interest and participation. Weight: 4. *Taylor and Gastroenterology Staff*

MED-270(C). Outpatient Hematology-Oncology (Duke). Course Goals: The

primary goal is to give the student experience in the diagnosis, long-term treatment, and supportive care of patients with hematologic and oncologic disorders in the outpatient setting. **How Goals Will Be Achieved:** On one half day each week the student will see and take part in the care of patients with these disorders under the supervision of staff personnel. (The course is offered over eight or preferably sixteen weeks.) **Methods of Evaluation:** Students will be evaluated by their preceptors on the basis of their ability to obtain a history, perform a physical examination, evaluate hematologic and other laboratory data, integrate these data, and propose assessments and plans of action. Weight: 1-2. *Rosse and hematology/oncology staff*

MED-271(C). Outpatient Hematology-Oncology (Durham Veterans Administration Medical Center). Course Goals: The primary goal is to give the student experience in the diagnosis, long-term treatment and supportive care of patients with hematologic and oncologic disorders in the outpatient setting. **How Goals Will Be Achieved:** On one-half day each week, the student will see and take part in the care of patients with hematological and oncological diseases in the outpatient setting. (The course is offered over eight or preferably sixteen weeks.) **Methods of Evaluation:** Students will be evaluated by their preceptors on the basis of their ability to obtain a history, perform a physical examination, evaluate hematologic and other laboratory data, integrate these data and propose assessments and plans of action. Weight: 1-2. *Weinberg and hematology/oncology staff*

MED-272(C). Clinical Hematology and Oncology (Duke). Course Goals: The primary goal is teaching the diagnosis and treatment of patients with hematologic and oncologic diseases. **How Goals Will Be Achieved:** Patient contact is stressed in various roles including those as outpatient, inpatient, and consultant physician. The diagnostic techniques used in assessing hematologic and oncologic diseases are stressed and the basic understanding of the pathophysiology of hematologic and oncologic diseases is provided. Two types of experience are offered: (1) the Consult Service in which the student sees the patient in consult on Wards 81-83 and reviews the diagnostic and therapeutic data with a consultant and (2) the Private Inpatient Service in which the student takes part in the care of the patients of one of the private physicians. Outpatient experience is provided for both types of experience. Four week students may select either experience while those electing an eight week rotation will have both types of experiences. **Methods of Evaluation:** Students will be evaluated by their preceptors on the basis of their ability to take a history, perform a physical examination, evaluate hematologic and other laboratory data, integrate these data, and propose assessments and plans of action. Weight: 4 or 8. *Rosse and hematology/oncology staff*

MED-273(C). Clinical Hematology and Oncology (Durham Veterans Administration Medical Center). Course Goals: The primary goal is teaching the diagnosis and treatment of patients with hematologic and oncologic diseases. **How Goals Will Be Achieved:** As a member of the section, the student actively participates in the following: (1) hematology-oncology consultation service for the VAMC wards, (2) hematology-oncology outpatient clinics, (3) management of disorders including leukemias, lymphomas, anemias, bleeding disorders, gammopathies, etc. An opportunity is provided for the student to learn and perform the specialized clinical and laboratory techniques involved in the evaluation of these patients. Ample time is available for contact with the hematology staff and library research. Students electing an eight week experience will function as subinterns for the second four weeks with a commensurate increase in responsibilities and duties in both the inpatient and outpatient arenas. **Methods of Evaluation:** Students will be evaluated by their preceptors on the basis of their ability to obtain a history, perform a physical examination, evaluate hematologic and other laboratory data, integrate these data, and propose assessments and plans of action. Weight: 4 or 8. *Weinberg and hematology staff*

MED-274(C). Medical Subinternship in Hematology-Oncology. Course Goals: This is an intensive course in the medical care of patients with hematologic and oncologic disorders. How Goals Will Be Achieved: The student will be given considerable responsibility, under supervision, in the care of inpatients either in Duke North or on Jordan Ward. They will receive instruction and experience in diagnostic and therapeutic procedures, the pathophysiology of the diseases in question, and the use of drugs and their interactions and the interactions of patients and their families. Methods of Evaluation: Students will be evaluated by their preceptors on the basis of their ability to obtain a history, perform a physical examination, evaluate hematologic and other laboratory data, integrate these data, and propose assessments and plans of action. Prerequisite: approval of faculty based on prior performance. Weight: 4. *Rosse and hematology/oncology staff*

MED-275(C). Clinical Coagulation. Course Goals: (1) Primary—to familiarize students with coagulation laboratory testing and their application to clinical problems. (2) Secondary—to give students in-depth exposure to clinical coagulation disorders, and to acquaint students with recent advances in the area of coagulation research. How Goals Will Be Achieved: The student will spend four weeks working directly with Dr. Charles Greenberg, Director of the Coagulation Lab. Each morning the student will meet for one-half hour and discuss an important topic in clinical coagulation. Then students will review the abnormal results from the coagulation laboratory worksheet and make rounds on selected patients. The student will be expected to work up each patient referred to the coagulation service. A clinical coagulation conference will be held every other week and the student will present at least one case. A clinical research project will be given to every student that will teach them how to critically evaluate laboratory tests. Students electing an eight-week rotation will have a more extensive research experience. Methods of Evaluation: Will be based upon observation of ability to take careful histories and physical examinations, by clinical presentations and assessments by demonstrating increase in knowledge about laboratory tests and their application to clinical problems. Weight: 4 or 8. *Greenberg*

MED-276(C). Oncology Subinternship (Asheville Veterans Administration Medical Center). Course Goals: To provide the student with a broad experience in the medical management of oncology patients including initial diagnostic evaluation, planning and monitoring of therapy and supportive care. Nonmalignant hematologic problems (mainly anemia and coagulopathy) will also be covered. How Goals Will Be Achieved: The student will do admission work ups, write orders and serve as the primary care provider for selected oncology patients under the supervision of the Chief of Oncology, Asheville Veterans Administration Medical Center. Didactic sessions will be provided by medical and nursing staff on various aspects of cancer and its treatment and complications. The student will participate in the biweekly oncology clinic and evaluate inpatients with anemia or coagulopathy on a consultative basis under staff supervision. Method of Evaluation: Chief of Oncology Service will evaluate student with standard Duke Department of medicine evaluation forms. Weight: 4. *Bishop and Gaines*

MED-280(C). * Clinical Infectious Diseases. Course Goals: To provide experience in the clinical and laboratory diagnoses of infectious diseases and in their therapy. The primary emphasis will be placed on learning from interaction with patients, resident staff and faculty on the consultation service. Students are expected to work up assigned patients by interviews, physical examination, and collation of laboratory results, leading to a summary and synthesis of the problem. Particular emphasis will be placed on close follow-up of the patients during hospitalization, including attendance at procedures or operations whenever possible. Students should know their own patients well enough to be able to give a

reasonable presentation on ward rounds or at conferences without notice. Students will be expected to read in-depth standard texts about their patients' problems, including a few recent relevant primary references. Students are expected to attend the various conferences listed on the weekly schedule of division activities punctually, including microbiology plate rounds, Journal Club, and tutorials. They will be asked to present cases and provide some discussion at the Thursday VAMC conference, and to present cases as requested by Dr. Osterhout at his teaching conferences (MIC-339B). Each student should be prepared to present and briefly discuss one article that he or she considers to be interesting and timely at Journal Club. Methods of Evaluation: Each student's performance will be evaluated and graded by the resident, fellow, attending, and Dr. Osterhout, using the usual "honors," "pass plus," "pass," "deferred," or "unsatisfactory" system. In arriving at a consensus, appropriate emphasis will be placed on knowledge, enthusiasm, and evidence of improvement during the rotation. There will be no written examination. No other courses are to be taken in conjunction with MED-280(C). Adds will be accepted at any time providing the course has not been filled. Drops will not be accepted within thirty days of the first day of classes unless the student finds his own replacement. Weight: 4. *Durack and infectious disease staff*

MED-281(C). Infectious Diseases Subinternship (Asheville Veterans Administration Medical Center). Course Goals: Familiarizing students with the methods for diagnosing and managing patients with a wide variety of infectious diseases and allowing students to participate in basic techniques used to evaluate clinical specimens in the Clinical Microbiology Laboratory. How Goals Will Be Achieved: By allowing students to become involved in the initial evaluation of patients referred for infectious disease consultation and by discussing their diagnostic and management concepts with the course director. Students will also have a daily exposure to the Clinical Microbiology Laboratory where the basic techniques will be demonstrated and relevant culture material will be reviewed. Students will be provided with appropriate reference material and will be expected to refer to these sources regularly. Each student will also have several opportunities during the rotation to prepare and present more in-depth discussions on particular cases or problems they have evaluated. The course director will also provide at least weekly conferences to the student group on relevant subject matter. Method of Evaluation: Student performance will be assessed by the course director based on the student's fund of knowledge, ability to carry out an appropriate physical examination, ability to construct an appropriate differential diagnosis, ability to plan a clinical evaluation and arrive at a reasonable plan for management and ability to related to patients and colleagues. Weight: 4. *Sarubbi and Holland*

MED-290(C). Metabolism and Endocrinology. Course Goals: (1) Primary — this course is designed to provide the student an in-depth experience in evaluation and management of patients with endocrine disorders. (2) Secondary — basic clinical skills will be supplemented with an in-depth experience in hormone physiology. The student will have the opportunity to explore through reading and conferences the mechanism of hormone action and physiologic consequences of hormone interaction with target tissues. How Goals Will Be Achieved: Students may be introduced to patient problems through working with one of the preceptors — Drs. McPherson, Feinglos, Ellis, and Johnson. Prior arrangements must be made with a faculty member in this case, or students may work with fellows on the consult service. In addition, the students will be introduced to patient problems through outpatient clinics specializing in endocrine problems, staff consultation rounds, and weekly endocrine grand rounds. The inpatient and outpatient contacts will provide the student the opportunity for evaluation and management of endocrine problems. The consultation rounds and weekly conference will serve

as the focus for discussions on basic mechanisms of hormone action. Methods of Evaluation: A written critique will be provided by the student's preceptor and comments will be sought from other members of the division. Weight: 4. *Holmes and endocrinology staff*

MED-293(C). Diabetes Mellitus Subinternship (Asheville Veterans Administration Medical Center). Course Goals: (1) Primary—to provide the student with an in-depth experience in the management of patients with diabetes mellitus and its complications. (2) Secondary—to teach the student the physiology of insulin and counter-regulatory hormones and intermediate carbohydrate metabolism; to provide the student with an understanding of the pathophysiology of diabetes mellitus and its complications. How Goals Will Be Achieved: The student will work up and write the orders on the patients with diabetes admitted to the endocrine section at AVAMC. The student will also participate in the diabetes clinic held four times weekly at the outpatient department at the AVAMC. Daily rounds and outpatient work will be supervised by the chief of endocrinology at AVAMC. In addition, the student will participate in the care of diabetic retinopathy at the general ophthalmology and retinal clinics, supervised by ophthalmology staff (examination, laser beam therapy, etc.). The student will participate in the diabetic training program. Method of Evaluation: Chief of Endocrinology will evaluate the student with standard Duke Department of Medicine student evaluation forms. Weight: 4. *Gomez-Uria, Cherpak and Watkins*

MED-300(C). Nephrology. Course Goals: (1) Primary—to provide clinical experience in the diagnosis, assessment, and treatment of renal diseases and hypertension. (2) Secondary—to integrate renal physiology, immunology, pathology, and biochemistry into the clinical assessment of renal diseases. How Goals will be Achieved: Students participate fully in both inpatient and outpatient assessment of patients presenting with fluid and electrolytes disorders, problem hypertension, acute renal failure, end-stage renal disease and related complications. The student rounds daily with a renal fellow or senior resident, attends twice weekly faculty teaching rounds and attends regularly scheduled conferences devoted to correlations with basic science, review of renal biopsy material, transplantation, etc. Special emphasis is placed on renal physiology and pathophysiology, renal histopathology, and hypertension. Students may elect to participate at the VA Medical Center or on the private or nonprivate services at Duke. Methods of Evaluation: written comments from the faculty. Weight: 4. *Dennis and the nephrology staff*

MED-310(C). Neurology Clerkship. Course Goals: (1) Primary—to train students in the techniques of history, physical examination, and data synthesis in medical neurology, with special emphasis on developing a reliable neurological examination. (2) Secondary—to understand the localization and differential diagnosis of lesions and diseases affecting the nervous system. How Goals Will Be Achieved: Students are assigned to inpatient services at Duke and the VA Medical Centers. Each service consists of medical interns, neurology residents, and senior staff. The student is responsible for the complete work-up of at least three new patients per week. All patients are reviewed with the resident and presented to the attending physician during daily rounds. Efficiency and completeness are emphasized. Some patients are presented to the teaching attendings assigned to the Duke and VA Medical Center services for formal combined teaching rounds three times weekly. Students attend all major conferences, including neurology-neurosurgery grand rounds, neuropathology rounds, brain cutting conference, medicine clinical conference, and can attend other subspecialty rounds (neuromuscular, stroke, epilepsy, neuro-oncology, and others). Full-time participation is expected. Students electing an eight week experience may participate in either a

subinternship or consultation rotation during the second four weeks, depending on performance. Methods of Evaluation: Each member of the team (residents and staff) submits a written evaluation concerning students' performance. Weight: 4 or 8. *Roses and neurology staff*

MED-320(C). Rheumatic and Immunological Diseases. Course Goals: (1) Primary—to provide the student with experience in the recognition and care of patients with inflammatory disease, immunologic disease, arthritides connective tissue disease, and metabolic arthropathies. (2) Secondary—to have the student become acquainted with the specialized laboratory and clinical techniques relating to the evaluation of patients with rheumatic, immunologic, and metabolic disorders affecting connective tissue. Joint aspiration, evaluation of immunological testing, synovial fluid analysis, bone and joint radiology, and histopathological analysis of tissue biopsies will be studied. How Goals Will Be Achieved: Students will evaluate patients at the Duke and Durham VA Medical Center. Daily rounds are held with the faculty where patients are presented and reviewed in detail. Journal clubs precede rounds four times a week. Basic science conferences, bone and joint radiology conferences, pathology conferences and rheumatology/immunology grand rounds are held at regular weekly intervals. A comprehensive approach to the evaluation and treatment of patients with inflammatory, immune deficiency, and certain metabolic disorders is emphasized. Students are assigned primary responsibilities either on the inpatient service or the consultation service at the Duke or Durham VA Medical Centers. In addition to their patient responsibilities, students are assigned to ambulatory care clinics and participate in all the scheduled functions of the division. Methods of Evaluation: Students' evaluations are based on their patient presentations, their participation in discussions on rounds and in conferences, and their presentation at journal clubs. Prerequisite: No other courses are to be taken in conjunction with Medicine 320(C). Weight: 4. *Snyderman and rheumatology/immunology staff*

MED-321(C). Rheumatology. Course Goals: An introductory course in clinical rheumatology designed to introduce students to the basics of differential diagnosis in the rheumatic diseases and to provide more detailed knowledge of the more common and major groups of rheumatic diseases. How Goals Will Be Achieved: This is primarily a lecture course. Use of patient materials will be limited. Methods of Evaluation: written examination. Weight: 1. *Rice and invited lecturers*

MED-330(C). Tutorial in Medical Decision Making and Cost Analysis. Course Goals: (1) Primary—to learn how to interpret often contradictory evidence from the medical literature; to learn how to take cost into consideration when planning diagnostic evaluations and treatment. (2) Secondary—to learn how to apply results of clinical research to individual patients. How Goals Will Be Achieved: Formal decision analysis methods suitable for studying common patient care dilemmas will be described in a weekly didactic session. Students will then apply these techniques to a problem of their own choosing. They will then work through this project under the guidance of their instructor. Emphasis will be on projects that can be completed during the sixteen-week time period. Completed projects will be potentially publishable, but this is not required. Time commitment will average 4-6 hours per week. Methods of Evaluation: Student evaluation will be by a combination of written examination and assessment by the instructor(s). Weight: 2. *Frazier and Linzer*

MED-400(C). Geriatric Medicine. Course Goals: (1) Primary—become familiar with the principles of caring for the geriatric patient. (2) Secondary—become familiar with the physiology and diseases of aging. How Goals Will Be Achieved: This elective is offered by the interdepartmental faculty of the Division of Geriatric

Medicine. The student will work with faculty, fellows, and house staff in number of settings involved in the care of the geriatric patient. These will include the Geriatrics Evaluation and Treatment Clinic (Duke), Geriatric Evaluation Unit and Clinic (VAMC), geriatric consultation services (VAMC, DCG, Duke), nursing home facilities, interactions with community services (Coordinating Council for Senior Citizens), home assessment, and other. Principles to be stressed will be biology and pathophysiology of aging, multiple clinical problems in the elderly, interdisciplinary team approach to evaluation, planning and treatment; goals of maximal functional achievement and independence for the elderly. The student will participate actively in the work-up and management of patients in both inpatient and outpatient settings as well as become more familiar with the problems of the elderly in the community. Familiarity with the growing literature in geriatric medicine will be encouraged and the student will participate in seminars, lectures, and team meetings at the appropriate sites including the Duke Center for the Study of Aging. Methods of Evaluation: Evaluation will be by consensus of instructors and fellows at the various training sites.

It will be based on discussions and presentations throughout the course period. Prerequisite: approval of course director. Weight: 4. *Cohen and gerontology staff*

MED-410(C). Psychosocial Aspects of Medical Illness. Course Goals: (1) Primary—to provide the student with knowledge of basic principles and practical skills relevant to determining the role of psychosocial factors in the etiology and course of physical disease, as well as the patient's adjustment to illness. (2) Secondary—to help the student improve interviewing and history taking skills necessary to establish an optimum doctor-patient relationship. How Goals Will Be Achieved: Students will tape record one new patient work-up per week which they will go over with the instructor during a supervisory hour. Method of Evaluation: will be based upon improvement in ability to elicit psychosocial data relevant to the present illness. Prerequisite: This course must be taken in conjunction with another course in which the student is directly involved in the evaluation and treatment of nonpsychiatric adult patients. Students should contact Dr. Redford Williams (684-3863) prior to the start of the term to arrange meeting times. Weight: 2. *Williams*

Microbiology and Immunology

James B. Duke Professor: Wolfgang K. Joklik, D. Phil. (Oxford, 1952), *Chairman*.

Professors: James B. Duke Professor D. Bernard Amos, M.D. (Guy's Hospital, London, 1963); Robert C. Bast, Jr., M.D. (Harvard, 1971); Deepak Bastia, Ph.D. (Chicago, 1971); Dani P. Bolognesi, Ph.D. (Duke, 1967); Rebecca H. Buckley, M.D. (North Carolina at Chapel Hill, 1958); Peter Cresswell, Ph.D. (London, 1971); Eugene D. Day, Ph.D. (Delaware, 1952); David T. Durack, D.Phil. (Oxford, 1973); Richard S. Metzgar, Ph.D. (Buffalo, 1959); Suydam Osterhout, M.D. (Duke, 1949), Ph.D. (Rockefeller Inst., 1959); Wendell F. Rosse, M.D. (Chicago, 1958); Hillard F. Seigler, M.D. (North Carolina at Chapel Hill, 1960); Ralph Synderman, M.D. (New York, Downstate Med. Ctr., 1965); Frances E. Ward, Ph.D. (Brown, 1965); Robert W. Wheat, Ph.D. (Washington Univ., 1955); Catherine M. Wilfert, M.D. (Harvard, 1962); Hilda P. Willett, Ph.D. (Duke, 1949).

Visiting Professor: Nicholas C. Palczuk, Ph.D. (Pennsylvania, 1958).

Adjunct Professors: James J. Burchall, Ph.D. (Illinois, 1963); David W. Scott, Ph.D. (Yale, 1969); Norman F. Weatherly, Ph.D. (Kansas, 1962).

Associate Professors: Ronald B. Corley, Ph.D. (Duke, 1975); Jeffrey Dawson, Ph.D. (Case Western Reserve, 1969); Sharyn A. Endow, Ph.D. (Yale, 1975); Gale B. Hill, Ph.D. (Duke, 1966); Jack D. Keene, Ph.D. (Washington, 1974); Dolph Klein, Ph.D. (Rutgers, 1961); Elwood A. Linney, Ph.D. (California at San Diego, 1973); Thomas G. Mitchell, Ph.D. (Tulane, 1971); Harvey J. Sage, Ph.D. (Yale, 1958); Peter Zwadyk, Jr., Ph.D. (Iowa, 1971).

Associate Medical Research Professor: Sara E. Miller, Ph.D. (Georgia, 1972).

Adjunct Associate Professors: Jeffrey J. Collins, Ph.D. (Harvard, 1972); Lorraine Flaherty, Ph.D. (Cornell, 1973); Hillel S. Korean, Ph.D. (Harvard, 1972).

Assistant Professors: Dolph O. Adams, M.D. (Med. Coll. of Georgia, 1965); Yair Argon, Ph.D.

(Harvard, 1979); Ralph R. Bollinger, M.D. (Tulane, 1970), Ph.D. (Duke, 1977); Charles E. Buckley III, M.D. (Duke, 1954); Miles W. Cloyd, Ph.D. (Duke, 1976); Olivera J. Finn, Ph.D. (Stanford, 1980); Harry A. Gallis, M.D. (Duke, 1967); Barton F. Haynes, M.D. (Baylor, 1973); Kenneth N. Kreuzer, Ph.D. (Chicago, 1978); David R. McClay, Jr. (North Carolina at Chapel Hill, 1971); James E. Nidel, Ph.D. (Miami, 1973), Ph.D. (Miami, 1974); Michael C. Ostrowski, Ph.D. (South Carolina, 1979); David J. Pickup, Ph.D. (National Institute of Medical Research, London, 1979); David S. Pisetsky, Ph.D. (Albert Einstein, 1972), M.D. (Albert Einstein, 1973).

Assistant Medical Research Professors: Andrew E. Balber, Ph.D. (Rockefeller, 1971); Vickers Burdett, Ph.D. (Georgetown, 1973); Richard A. Chmelo, Ph.D. (West Virginia, 1981); W. David Sedwick, Ph.D. (Pennsylvania, 1970); Kay H. Singer, Ph.D. (Duke, 1977).

Adjunct Assistant Professor: Lynn P. Elwell, Ph.D. (Oregon, 1974); William J. Hubbard, Ph.D. (Iowa, 1973); Susan F. Radka, Ph.D. (Pittsburgh, 1977).

Medical Research Associates: Mary Carrington, Ph.D. (Iowa, 1982); Enrique G. Estevez, Ph.D. (Miami, 1976); Lizzie J. Harrell, Ph.D. (North Carolina State, 1978); Wensi Hu, Ph.D. (Minnesota, 1982); Donna D. Kostyu, Ph.D. (Duke, 1979).

Lecturer: Alfred P. Sanfilippo, Ph.D. (Duke, 1975), M.D. (Duke, 1976).

Research Associates: J. Alexander, Ph.D.; D. Armaleo, Ph.D.; A. Banerjee, Ph.D.; J. Bartlett, M.D.; J. Billys, M.D.; J. Blum, Ph.D.; J. Chambers, Ph.D.; S. Chambers, Ph.D.; S. Deutscher, Ph.D.; S. Dillon, Ph.D.; R. Drucker, Ph.D.; S. Eppes, M.D.; D. Friele, Ph.D.; R. Gaillard, Ph.D.; L. Hart, M.D.; M. Hollingsworth, Ph.D.; A. Huff, Ph.D.; P. Humphrey, M.D.; G. Kaplan, Ph.D.; D. Kelner, Ph.D.; Y. Kim, Ph.D.; D. Komma, Ph.D.; T. Kuhara, Dr. Med. Sci.; P. Le, Ph.D.; P. Lutz, Ph.D.; K. Lysterly, M.D.; K. McKinnon, Ph.D.; M. Moody, Ph.D.; J. Moore, Ph.D.; S. Mukherjee, Ph.D.; I. Patel, Ph.D.; E. Patterson, Ph.D.; N. Schek, Ph.D.; S. Sharma, Ph.D.; T. Sladek, Ph.D.; J. Wiener, Ph.D.

Required Courses

MIC-200. The core course for all freshman medical students—is given in the second semester of the first year. An intensive study is made of the common bacteria, viruses, fungi, and parasites which cause disease in man. The didactic portion of the course focuses on the nature and biological properties of microorganisms causing disease, the manner of their multiplication, and their interaction with the entire host as well as specific organs and cells. The role of the immune system and of specific antimicrobial therapy on the host-parasite relationship are included.

The laboratory portion of the course is designed to acquaint students with the methods and procedures employed in the clinical microbiology laboratory, to provide the basis for an understanding of cell-virus interactions and to demonstrate the nature of the more common pathogenic fungi and parasites. Clinical case histories are presented by the clinical staff to correlate this course with patient care.

MIC-201. A short core course in immunology for freshman medical students. The course includes a general introduction to the development of various special areas of immunology such as immunochemistry, immunohematology, and immunogenetics including transplantation and tumor immunology. The initial lectures describe the properties of antibodies, the characteristics of antigens, classes of reactive lymphocytes and accessory cells, the biology of substances released from lymphocytes (lymphokines) and the complement system. The course is enriched with clinical presentations and by discussion groups.

Electives

MIC-246(B). Seminar on Parasitic Diseases. Topics in the physiology and immunology of major human and animal parasites with an emphasis on protozoa and schistosomes. Extensive reading in and discussion of current literature. Basic parasitology developed in introductory readings and lectures. Weight: 3. *Balber*

MIC-252(B). * General Virology and Viral Oncology. The first half of the course will be devoted to a discussion of the structure and replication of mammalian and bacterial viruses. The second half will deal specifically with tumor viruses, which are discussed in terms of the virus-cell interaction, the relationship of virus

infection to neoplasia, and the role of the immunological response to tumor virus infection. The viral oncology part of the course may be taken for half credit in term 4. Permission of the instructors is required. Weight: 4. *Keene, Joklik, Bastia, Kreuzer, Ostrowski, Linney, and Pickup*

MIC-259(B). * Molecular Biology I. Protein and Membrane Function. Detailed concepts of the structure and function of proteins as enzymes and as structural elements of cellular substructures, including: protein primary structure and its determination, patterns of protein folding, mechanisms of enzyme catalysis and regulation, function and formation of multimeric protein assemblies, proteins and other constituents of biological membranes. Weight: 3. *Richardson and staff*

MIC-268(B). * Molecular Biology II. Nucleic Acids. Consideration of structure and metabolism of nucleic acids in the context of their biological function in information transfer. Emphasis will be on the current research literature. Weight: 3. *Modrich and staff*

MIC-269(B). * Advanced Cell Biology. An advanced course in cell biology with emphasis on current research literature, and featuring in-depth discussion of selected areas by staff engaged in research in these areas. The course covers membrane structure and physiology, the cytoskeleton, cell motility systems, chromosome mechanics, structure and function, and eukaryotic gene structure, control, and replication. Weight: 3. *Endow and staff*

MIC-291(B). * Comprehensive Immunology. An intensive course in the biology of the immune system and the structure and function of its component parts. Major topics discussed are: properties of antigens; specificity of antibody molecules and their biologic functions; cells and organs of the lymphoid system; structure and function of complement; inflammation and nonspecific effector mechanisms; cellular interactions and soluble mediators in lymphocyte activation, replication, and differentiation; regulation of immune responses; neoplasia and the immune system; molecular structure and genetic organization of (a.) immunoglobulins, (b.) histocompatibility antigens, and (c.) T cell receptor. Weight: 4. *Argon and staff*

MIC-296(B). Contemporary Molecular Immunology. A detailed study at the molecular level of some of the latest developments in immunology. The subject matter, although variable and continually updated to keep it fresh, will be concerned with three general areas: (a.) the molecular analysis of the cellular components and processes which underlie the biological behavior of the cells involved in immune phenomena; (b.) the chemical and physical properties of antigens and antibodies and the physical-chemical analysis of antigen-antibody interaction; (c.) recent methodological advances contributing to or resulting from a and b. Weight: 3. *Cresswell and Staff*

MIC-301(B). Principles of Infectious Disease. A lecture and seminar course to familiarize students with the basic biologic concepts, the pathogenesis, and the clinical manifestations of infectious diseases caused by bacteria, viruses, fungi, rickettsia. The host defenses to infectious agents including the acute inflammatory response and humoral and cellular immunity, and current and future trends in the development of vaccines and antimicrobial and antiviral agents will also be discussed. Weight: 6. *Wilfert, Lehrman, Gutman, Katz, Durack, Mitchell, Osterhout, Joklik, and Keene*

MIC-304(B). Molecular Membrane Biology. Advanced seminar course on various cellular membranes; emphasis on cell biology of the immune system. Discussion topics include: biosynthesis of membrane proteins; intracellular transport vesicles; endocytosis; signal transduction across the plasma membrane; intra-

cellular organelles and protein sorting; cell interactions in differentiation. Weight: 2. *Argon and Cresswell*

MIC-306(B). Clinical Microbiology. A bench-training course in methods used in clinical microbiology stressing isolation, characterization, and antibiotic susceptibility testing of clinically significant microorganisms. Course conducted in Duke microbiology division laboratories. Prerequisite: permission of instructor. Weight: 8. *Klein*

MIC-308(B). Clinical Microbiology-Immunology. A bench-training course in methods used in clinical microbiology stressing isolation and characterization of clinically significant microorganisms. Course conducted in the V.A. Hospital microbiology laboratory. Weight: 8. *Zwadyk*

MIC-310(B). Molecular Development. Selected topics of current research using molecular and genetic approaches to study development and developmental gene regulation in eukaryotes. Lectures and student presentations of research with various developmental systems (e.g. *C. elegans*, *Drosophila*, mouse teratocarcinoma cells, mouse embryos) will be included. Weight: 2. *Linney, Bastia, Endow and Ostrowski*

MIC-325(B). * Medical Mycology. Comprehensive lecture and laboratory coverage of all the fungi pathogenic for humans. The epidemiology, clinical manifestations, diagnosis, host responses and treatment of each mycotic disease will be explored, along with the biology, ecology, immunology, and mechanisms of pathogenicity of the fungal agents. Both practical aspects and future trends in clinical mycology, as well as the dynamics of host-fungal interactions will be covered. There will be several invited lecturers, each an internationally recognized scientist, discussing their particular areas of mycological expertise and current research. Weight: 4. *Mitchell*

MIC-330(B). * Medical Immunology. This is a comprehensive course in clinical immunology which attempts to define the role that immunology plays in the etiology, diagnosis, nosology, and therapy of human disease. The course includes some lectures on basic and applied immunology but many lectures are given by faculty members from clinical departments. Weight: 6. *Ward and staff*

MIC-336(B). * Contemporary Topics in Immunogenetics. Selected themes in immunogenetics with special emphasis on molecular approaches. The major areas discussed are: the nature, interaction and expression of immunoglobulin genes and T-cell receptor genes, the genes of the major histocompatibility complex, and the genes of the T/t complex. The central ideas discussed include the manner in which cells recognize and interact with each other in phylogeny, ontogeny, and in differentiation; how gene families evolve and interact, and how information about these complex genetic systems is used in basic research and in clinical medicine. Prerequisite: MIC-291(B). Weight: 2. *Amos and Ward*

MIC-339(B). Diagnostic Microbiology and Infectious Disease. Introduction to the methods for the laboratory diagnosis of infectious disease and their clinical application. Basic biologic and clinical aspects will be correlated in a seminar-lecture for mat. Weight: 2. *Suydam Osterhout*

MIC-399(B). Preceptorship in Microbiology and Immunology. An individual reading and/or laboratory course in specialty areas supervised by an individual faculty member. Acceptance, nature of topic, and amount of credit by individual arrangement with proposed faculty member. Weight: 1-8 per 8 weeks. *Microbiology and immunology staff*

MIC-403(B). Investigative Problems in Disease Caused by Viruses, Bacteria, and Fungi. Introduction to techniques for research with viruses, mycoplasmas,

bacteria, and fungi; clinical experience with infectious diseases related to the investigative programs. The student will be involved in some aspect of laboratory research, and should consult with the investigator with whom work will be done prior to signing up for the course. Weight: 8. *Wilfert, Durack, Mitchell, and Gallis*

MIC-405(B). Research in Immunohematology. The course is designed to provide the opportunity for students to select a project involving immunohematologic techniques and to pursue, through original research, the project conclusion. In particular, projects concerned with complement, red cell lysis, and red cell antigens will be stressed. Close supervision will be provided. Weekly seminars in immunohematology will be held. Library readings will be stressed. Weight: 6-8. *Rosse*

Obstetrics and Gynecology

Professor: Charles B. Hammond, M.D., E. C. Hamblen Chair of Reproductive Biology and Family Medicine, (Duke, 1961), *Chairman*.

Professors: Arthur C. Christakos, M.D. (Med. Coll. of South Carolina, 1955); James M. Ingram Professor of Gynecologic Surgery William T. Creasman, M.D. (Baylor, 1966); Allen P. Killam, M.D. (Texas, 1960); Roy T. Parker, M.D., F. Bayard Carter Chair of Obstetrics and Gynecology, (Med. Coll. of Virginia, 1944); Warren E. Patow, M.D. (Marquette, 1947); Charles H. Peete, Jr., M.D. (Harvard, 1947); David W. Schomberg, Ph.D. (Purdue, 1965); E. Lee Tyrey, Ph.D. (Illinois, 1969).

Associate Professors: W. Allen Addison, M.D. (Duke, 1960); Arthur F. Haney, M.D. (Arizona, 1972); Gail B. Hill, Ph.D. (Duke, 1966); Lloyd F. Redick, M.D. (Ohio, 1958).

Assistant Professors: Nels C. Anderson, Ph.D. (Purdue, 1964); Lawrence C. Bandy, M.D. (Duke, 1977); Dale M. Bearman, M.D. (Tufts, 1981); James D. Bowie, M.D. (Oklahoma, 1967); Jane E. Brazey, M.D. (Washington Univ., 1972); William C. Dodson, M.D. (Temple, 1980); Arnold S. Grandis, M.D. (Duke, 1974); Marvin Hage, M.D. (Michigan, 1967); Vanessa P. Haygood, M.D. (Harvard, 1978); Claude L. Hughes, M.D., Ph.D. (Duke, 1980); Charles H. Livengood III, M.D. (Duke, 1976); Helen Kay, M.D. (Yale, 1979); Jeffrey V. May, Ph.D. (Rhode Island, 1978); David G. Mutch, M.D. (Washington Univ., 1980); Joanne T. Piscitelli, M.D. (Duke, 1980); Patricia M. Saling, Ph.D. (Pennsylvania, 1979); John T. Soper, M.D. (Iowa, 1978); John F. Steege, M.D. (Yale, 1972); Anna L. Stout, Ph.D. (South Carolina, 1980); Kenneth Trofatter, M.D. (Duke, 1979); Camille J. Wahbeh, M.D. (Lebanon, 1980); J. Brice Weinberg, M.D. (Arkansas, 1969).

Associate Clinical Professor: Donald T. Moore, M.D. (Meharry, 1958).

Assistant Clinical Professors: James L. Allen, M.D. (Emory, 1965); John V. Arey, M.D. (Harvard, 1946); Joseph W. Baggett, M.D. (Maryland, 1946); Rudy W. Barker, M.D. (North Carolina at Chapel Hill, 1967); John O. Buoni, M.D. (New York Med. Coll., 1963); Walker H. Campbell, M.D. (Med. Coll. of Virginia, 1963); David B. Crosland, M.D. (North Carolina at Chapel Hill, 1958); Yancey G. Culton, Jr., M.D. (Duke, 1956); Jerry L. Danford, M.D. (Duke, 1967); Crowell T. Daniel, Jr., M.D. (Med. Coll. of Virginia, 1948); Michael D. Fried, M.D. (New York, 1971); Carl A. Furr, Jr., M.D. (North Carolina at Chapel Hill, 1958); E. C. Garber, Jr., M.D. (Med. Coll. of Virginia, 1944); Michael D. Gooden, M.D. (North Carolina at Chapel Hill, 1973); Michel Goubran, M.D. (Cairo, Egypt, 1962); William D. Haitcock, M.D. (Med. Univ. of South Carolina, 1973); Perry M. Harmon, M.D. (North Carolina at Chapel Hill, 1974); James F. Holman, M.D. (Arkansas, 1970); Wanda L. Jenkins, M.D. (Cincinnati, 1979); Harry W. Johnson, M.D. (Duke, 1951); John W. Lane, M.D. (Duke, 1972); Joseph T. Lanman, Jr., Ph.D. (Indiana, 1977); Richard L. Lassiter, M.D. (North Carolina at Chapel Hill, 1965); Stephen C. Lies, M.D. (Duke, 1976); Frank E. Long, M.D. (Maryland, 1975); William A. Nebel, M.D., (North Carolina at Chapel Hill, 1962); Susan B. Nichols, M.D. (Missouri, 1976); Talbot F. Parker, Jr., M.D. (Jefferson, 1951); Phillip H. Pearce, M.D. (Duke, 1960); Steven M. Scott, M.D. (Indiana, 1974); W. Siegfried Smith, Jr., M.D. (Duke, 1961); Robert K. Yowell, M.D. (Duke, 1961).

Associates: Carl W. Christensen, M.D., Ph.D. (Wayne State, 1979); Sharon L. Rupp, B.S., A.A.S.; Daniel B. Whitesides, M.D. (Duke, 1976).

Assistant Medical Research Professor: Christopher P. Carron, Ph.D. (Iowa, 1982).

Clinical Associates: Elizabeth J. Burkett, B.S.N., M.S.N.; Francis S. Gardner, Jr., M.D. (Maryland, 1951); Ronald E. Granger, M.D. (California at Irvine, 1977); Charles O. Harris, M.D. (Duke, 1979); Linn H. Hatley, M.D. (North Carolina at Chapel Hill, 1976); Bennet A. Hayes, M.D. (North Carolina at Chapel Hill, 1957); Clayton J. Jones, M.D. (Tennessee, 1952); Glenward T. Keeney, M.D. (Med. Coll. of Virginia, 1967); William R. Lambeth, M.D. (Bowman Gray, 1974); Linda T. McAlister, M.D. (California at San Francisco, 1978); Jack P. McDaniel, M.D. (North Carolina at Chapel Hill, 1956); Dudley C. Miller, M.D. (Missouri, 1959); E. Frank Shavender, M.D. (North Carolina at Chapel Hill, 1968); Ira Q. Smith, M.D. (Bowman Gray, 1979); Joseph A. Stephens, M.D. (Pittsburgh, 1952); Thomas A. Stokes, Jr., M.D. (Duke, 1955); Allen H. Van Dyke, M.D. (Bowman Gray, 1971); Paul A. Vieta, M.D. (New Jersey, 1966); Bertram E. Walls, M.D. (Duke, 1972).

Required Course

In Introduction to Clinical Medicine the first-year student receives instruction in the fundamentals of obstetric and gynecologic history and pelvic examinations.

OBG-205. Required of all second-year students—consists of eight weeks in general obstetrics and gynecology. Students attend lectures, work daily in the general and special outpatient clinics, and are assigned patients on the obstetric and gynecologic wards. Students share in patient care, teaching exercises, and in daily tutorial sessions with the faculty. Clinical conferences, a gynecologic-pathology conference, endocrine conferences, and correlative seminars and lectures are included.

Electives

OBG-210(C). Gynecologic Cancer. This course presents a clinical experience in the management of the patients with a gynecologic malignancy. The student will assume the role of an extern. Outpatient, inpatient, and operative exposure to these patients will be extensive. Weight: 4 or 8. *Creasman, Parker, Soper, Brazey, and Mutch*

OBG-213(C). Preparation for Practice, Cape Fear Valley Hospital, Fayetteville Area Health Education Center. This is a unique opportunity to receive both didactic exposure and clinical experience in obstetrics and gynecology in Cape Fear Valley Hospital, a large community hospital in Fayetteville, North Carolina, where almost 4,000 patients are delivered each year. The student will actively participate in the care of patients in the labor and delivery rooms, assist at surgery, and render postoperative care. This is a community hospital experience rather heavily weighted in clinical obstetrics. Students will be exposed to a large volume of clinic opportunities. Two senior residents from Duke rotate through Cape Fear Valley Hospital. The student will be directly supervised by Dr. Warren Patow (full-time Duke faculty at Cape Fear) and Dr. Ed Garber, in addition to Duke obstetrics and gynecology residents. Weight: 4. *Hammond, Patow, Garber, and staff of Cape Fear Valley Hospital*

OBG-229(C). Endocrinology Seminar. Sessions with discussion of interesting clinical problems and related clinical and basic research in gynecologic endocrinology. Weight: 1. *Haney, Holman, Hammond, Schomberg, Tyrey, Saling, and fellows on Endocrine Division*

OBG-231(C). Clinical Reproductive Endocrinology. Course for students who desire additional basic and clinical experience in examination, diagnosis, and treatment of obstetric and gynecologic patients with endocrinopathy and infertility. Course consists of instruction in clinical reproductive problems correlated with examination and treatment of patients both in the Endocrinology Outpatient Clinic and in the hospital. Weight: 4. *Haney, Holman, Hammond, Schomberg, Tyrey, Saling, and fellows on Endocrine Division*

OBG-239(C). Perinatal Medicine. A study of the relationship of clinical factors during pregnancy, labor, delivery, and the first month of life. Emphasis will be placed on abnormal conditions of pregnancy as related to the infant, prenatal pathological conditions adversely afflicting the fetus and newborn, and early management of the infant. Current problems in maternal-fetal relationships will be outlined. The clinical rotation will consist of half time on the high-risk obstetric service and half time on the nursery service. (Duke North, ICN, or Duke South nurseries.) See also PED 239 and PED 225. Weight: 8. Must contact Killam prior to registration. *Killam*

OBG-243(C). Sex Education. This course is designed to prepare health professionals for dealing with situations involving sex education and counseling. A series of fourteen undergraduate lectures, given as part of the undergraduate course, Zoology 198.6, "Human Sex and Sexuality," will survey biological, psychological, sociocultural, and ethical aspects of human sexuality. Additional training sessions, specifically for medical students, will deal with the design, organization, and implementation of educational and counseling programs. The final eight weeks of the course will be spent gaining practical experience. Projects may be of the student's design, approved by the committee, or the student may participate in one of the ongoing projects of the committee such as teaching the seventh grade curriculum in the public schools. Weight: 3. *Steege and Christakos*

OBG-245(C). Office Gynecology. For students preparing for general practice, medicine, pediatrics, and surgery. Outpatient clinic and emergency room diagnosis and patient care are taught. Weight: 4 or 8. *Addison and staff*

OBG-247(C). Clinical Obstetrics. For students preparing for general practice and medicine or pediatrics. Antepartum, intrapartum and postpartum patient care are stressed and practical experience in the delivery room is provided at an intern level. Weight: 4 or 8. *Killam, Grandis, Kay, and fellows on obstetrical service*

OBG-249(C). Clinical Gynecology. For students preparing for general practice, surgery, and urology. Preoperative diagnosis and preparation and postoperative care are stressed. In addition, minor operative procedures are taught and students assume the responsibilities of an intern. Weight: 4 or 8. *Peete, Addison, Christakos, Livengood, Fortier, Haygood, and staff*

OBG-250(C). Psychosomatic Gynecology. For students in obstetrics and gynecology, family practice, and internal medicine. This course will emphasize clinical experience in the diagnosis and treatment of chronic pain, as well as the management of other psychosomatic and psychophysiologic problems in gynecologic practice. Clinical research may be undertaken by arrangement. Must contact Dr. Steege prior to registration. Weight: 1-3. *Steege and Stout*

OBG-253(C). Preparation for Practice, Cabarrus Memorial Hospital, Concord, North Carolina. This is an opportunity to receive both didactic exposure and clinical exposure in obstetrics and gynecology in the community hospital. The student will be expected to function as an intern and will participate actively in the care of the patients in the labor and delivery area, assist at surgery, and render postpartum and postoperative care. This is a community hospital experience rather heavily weighted in clinical obstetrics. The student will be exposed to a large volume of clinical material. The practitioners in the community are all board-certified obstetricians and gynecologists and are interested in student teaching. A Duke faculty person will provide additional guidance by visits once per week. This elective can be taken for four weeks for 4 units or eight weeks for 8 units. The student will be housed in quarters available for them. Weight: 4, 6, or 8. *Hammond and staff of the Cabarrus Memorial Hospital*

Ophthalmology

Professor: Helena Rubenstein Foundation Professor of Ophthalmology Robert Machemer, M.D. (Freiburg, Germany, 1959), *Chairman*.

Professors: W. Banks Anderson, Jr. M.D. (Harvard, 1956); Diane Van Horn Hatchell, M.D. (Marquette, 1968); Gordon K. Klintworth, M.D. (Univ. of Witwatersrand, 1957), Ph.D. (Univ. of Witwatersrand, 1966); M. Bruce Shields, M.D. (Oklahoma, 1966).

Associate Professor: Gary N. Foulkes, M.D. (Columbia, 1970).

Assistant Professors: Edward G. Buckley, M.D. (Duke, 1977); Michael L. Cobo, M.D. (Harvard, 1975); Eugene deJuan, M.D. (Alabama, 1979); Jonathan J. Dutton, M.D. (Washington, 1977); Brooks W. McCuen II, M.D. (Columbia, 1974); Alan D. Proia, Ph.D. (Rockefeller, 1979), M.D. (Cornell, 1980).

Associate Clinical Professors: Arthur C. Chandler, Jr., M.D. (Duke, 1959); Edward K. Isby, Jr.,

M.D. (Wayne, 1955); Lawrence W. Moore, Jr., M.D. (Duke, 1963); Judy H. Seaber, Ph.D. (Duke, 1985).
 Clinical Professor: Samuel D. McPherson, Jr., M.D. (Johns Hopkins, 1943).
 Assistant Clinical Professors: John W. Cline, M.D. (North Carolina at Chapel Hill, 1966); Robert D. Dawson, M.D. (Meharry, 1943); Edward M. Hedgepeth, M.D. (North Carolina at Chapel Hill, 1962); Thomas C. Kerns, M.D. (Duke, 1950); Walter C. McLean, Jr., M.D. (Virginia, 1975); Calvin H. Mitchell, M.D. (Duke, 1958); Charles F. Sydnor, M.D. (Virginia, 1969); James S. Tiedeman, M.D. (Duke, 1977).
 Clinical Associates: Thomas L. Beardsley, M.D. (Duke, 1971); Dorothy Bell, M.D. (North Carolina at Chapel Hill, 1980); Lawrence P. Chong, M.D. (Harvard, 1981); J. Thomas Foster, M.D. (Duke, 1958); William R. Harris, M.D. (North Carolina at Chapel Hill, 1956); Edward K. Isbey III, M.D. (North Carolina at Chapel Hill, 1981); John H. Killian, M.D. (Bowman Gray, 1967); Martin J. Kreshon, M.D. (Marquette, 1954); W. Hampton Lefler, M.D. (Bowman Gray, 1963); Joseph A. Locascio, M.D. (Virginia, 1975); James F. Martone, M.D. (Albert Einstein, 1978); Edward E. Moore, M.D. (Harvard, 1942); Jeffrey S. Rinkoff, M.D. (Baylor, 1979); Harold T. Rodenbiker, M.D. (Arizona, 1980); Clive H. Sell, M.D. (Vanderbilt, 1980); Harold E. Shaw, Jr., M.D. (Med. Univ. of South Carolina, 1973).
 Research Associate: Tetsu Hida, M.D. (Keio Univ., 1973).
 Emeritus: Joseph A. C. Wadsworth, M.D.

Electives

OPH-210(C). Medical Ophthalmology. The ophthalmic signs and symptoms of systemic disease are presented in a lecture series. Oriented for those students interested primarily in pediatrics, internal medicine, or ophthalmology. Weight: 1. *Shields and Tiedeman*

OPH-212(C). General Ophthalmology. A clinical preceptorship in which the student will participate and observe in the regular house staff activities, conferences, lectures, patient care, and treatment including surgery. Emphasis on the use of specialized ophthalmic apparatus is emphasized. Weight: 3-8. *Shields*

OPH-213(C). Ophthalmic Pathology. The student will review all ophthalmic pathology specimens submitted weekly and any pertinent permanent specimens, and will aid in presentation of cases at weekly ophthalmic pathology conferences. Weight: 1. *Klintworth*

OPH-214(C). Investigative Ophthalmology. The student is assigned a project relating to basic ophthalmologic problems. Technical assistance, sufficient equipment and laboratory animals are supplied for the completion of the project. The student is expected to attend all scheduled research seminars. Prerequisites: OPH-212(C) and OPH-210(C). Weight: 4-8. *Klintworth*

OPH-215(C). Pediatric Ophthalmology. A clinical preceptorship in which the student will participate in an outpatient pediatric ophthalmology clinic. The student will encounter the more common ocular disorders of childhood, including ocular motility disturbances, congenital disorders, and congenital metabolic disorders. The diagnosis and treatment aspects will be emphasized heavily. The course meets on Tuesdays from 9 A.M. until 4 P.M., or by special arrangement. Additional experiences, which would include surgery and/or pediatric neuro-ophthalmology can be arranged. Weight: 1 or 2. *Buckley and Seaber*

Pathology

Professor: James B. Duke Professor Robert B. Jennings, M.D. (Northwestern, 1950), *Chairman*.
 Professors: Dolph O. Adams, M.D. (Med. Coll. of Georgia, 1965); Ph.D. (North Carolina at Chapel Hill, 1972); Darell D. Bigner, M.D. (Duke, 1965), Ph.D. (Duke, 1971); Edward H. Bossen, M.D. (Duke, 1965); William D. Bradford, M.D. (Western Reserve, 1958); Peter C. Burger, M.D. (Northwestern, 1966); Bernard F. Fetter, M.D. (Duke, 1944); Donald B. Hackel, M.D. (Harvard, 1946); William W. Johnston, M.D. (Duke, 1959); Gordon K. Klintworth, M.D. (Univ. of Witwatersrand, 1957), Ph.D. (Univ. of Witwatersrand, South Africa, 1966); John A. Koepke, M.D. (Wisconsin, 1956); Salvatore Pizzo, M.D. (Duke, 1972), Ph.D. (Duke, 1973); Philip C. Pratt, M.D. (Johns Hopkins, 1944); Kenneth A. Schneider, M.D. (Northwestern, 1959); John D. Shelburne, M.D. (Duke, 1972); Joachim R. Sommer, M.D. (Munich, 1951); F. Stephen Vogel, (Western Reserve, 1944); Benjamin Wittels, M.D. (Minnesota, 1952).

Adjunct Professor: Paul Nettesheim, M.D., D.M.S. (Bonn, West Germany, 1959).

Associate Professors: Sandra H. Bigner, M.D. (Tennessee, 1971); Jane G. Elchlepp, M.D. (Chicago, 1955), Ph.D. (Iowa, 1948); Doyle G. Graham, M.D. (Duke, 1966); Raymond E. Ideker, M.D. (Tennessee, 1971); Kenneth McCarty, Jr., M.D. (Duke, 1972), Ph.D. (Duke, 1973); George Michalopoulos, M.D. (Athens, 1969), Ph.D. (Wisconsin, 1977); Keith A. Reimer, M.D. (Northwestern, 1972); Alfred Sanfilippo, Ph.D. (Duke, 1975), M.D. (Duke, 1976); Frances King Widmann, M.D. (Case Western Reserve, 1960); Peter Zwadyk, Jr., Ph.D. (Iowa, 1971).

Adjunct Associate Professors: Jacob S. Hanker, Ph.D. (Maryland, 1969); James A. Swenberg, D.V.M. (Minnesota, 1966), Ph.D. (Ohio, 1970).

Assistant Professors: John L. Abernathy, M.D., Ph.D. (Duke, 1980); Michael J. Borowitz, M.D., Ph.D. (Duke, 1977); Robert H. Christenson, Ph.D. (Florida State, 1980); Barbara J. Crain, M.D. (Duke, 1979); Robert L. Habig, Ph.D. (Purdue, 1966); Maureane R. Hoffman, M.D., Ph.D. (Iowa, 1982); Victor L. Roggli, M.D. (Baylor, 1976); Marcus Simpson, M.D. (North Carolina at Chapel Hill, 1972); Charles Steenbergen, M.D. (Pennsylvania, 1978), Ph.D. (Pennsylvania, 1979); Cheryl L. Szpak, M.D. (Southwestern, 1977); John Toffaletti, Ph.D. (North Carolina at Chapel Hill, 1977); John A. Wolfe, M.D. (Michigan, 1980).

Assistant Clinical Professors: Jane Gaede, M.D. (Duke, 1966); Robin T. Vollmer, M.D. (Duke, 1967).

Assistant Medical Research Professors: Steven S. Geier, Ph.D. (Duke, 1978); Mario Gonzalez-Gronow, D.Sc. (Chile, 1970); Thomas A. Hamilton, Ph.D. (Oregon, 1976); Carol W. Lewis, Ph.D. (North Carolina at Chapel Hill, 1972); James G. Lewis, Ph.D. (Duke, 1982); Eileen M. Mikat, Ph.D. (Duke, 1979); Kent E. Pinkerton, Ph.D. (Duke, 1982); Emily A. G. Reisner, Ph.D. (Case Western, 1969); Gyongyi M. Szakal-Quin, Ph.D. (Budapest, 1978).

Adjunct Assistant Professors: Arnold R. Brody, Ph.D. (Colorado, 1969); Jack A. Dean, Ph.D. (Arizona, 1972); Peter Ingram, Ph.D. (Univ. of Southampton, England, 1967); Ralph C. McCoy, M.D. (Emory, 1967); Frank A. Sedor, Ph.D. (Florida, 1971); Gideon Strassman, Ph.D. (Weizmann Inst. of Science, 1981).

Associates: John A. Bittikofer, Ph.D. (Purdue, 1971); Kenneth R. Broda, Ph.D. (Duke, 1977); Matthew D. Perry, M.D. (Miami, 1980); Margaret C. Schmidt, M.A. (Louisville, 1969); Mark A. Shifman, M.D. (Ohio, 1978); J. Alan Tucker, M.D. (Vanderbilt, 1981).

Required Course

PTH-200. The core course in pathology is given during the second term of the first year. Fundamentals of pathology are presented by correlating gross and microscopic material to illustrate the structural changes in disease. Lectures dealing with broad concepts of disease processes are presented by senior faculty, and conferences with small groups of students are held under the guidance of staff members. Etiology and pathogenesis of disease, as well as the experimental approach are emphasized for the purpose of correlation with clinical disease. In addition to group work, conferences are scheduled to discuss problems derived from autopsies. Students are required to collaborate in postmortem studies and present cases in clinical-pathologic conferences under the direction of the staff.

Electives

PTH-223(B). Autopsy Pathology. The course is intended to introduce students to the autopsy as an investigative tool; anatomic-clinical correlation is emphasized. Students work directly with one or more members of the Pathology Department. They will first assist at autopsies and then perform autopsies under supervision. They will work up these cases with particular attention to correlations with clinical and experimental medicine, prepare the final autopsy reports on them, and will work essentially at the level of a house officer. Students will be expected to present their findings at staff conferences. If the course is oversubscribed, the students will be chosen by lot. Weight: 8. *Adams and staff*

PTH-225(B). * Cardiovascular Pathology. Cardiovascular disease processes will be studied, reviewing anatomic, embryologic, and physiologic features, and utilizing case material and gross specimens. Clinicopathologic correlation will be stressed. Weight: 2. *Hackel, Reimer, and Ideker*

PTH-231(B). * Ophthalmic Pathology. This course is designed for students

with an interest in ophthalmic diseases and particularly for those planning a career in pathology or ophthalmology, and will consist of lectures, seminars, and laboratory sessions. The normal anatomy and embryology of the eye will be reviewed, and the various reactions of the eye to injury will be studied in gross and microscopic specimens. The more common diseases will be considered in detail. Weight: 3. *Klintworth*

PTH-237(B). Surgical Pathology. This course is designed for the student who wishes more experience in the study of disease. Although the course is entitled *Surgical Pathology*, this does not imply interest solely in the individual oriented to surgery. Problems in dermatology, gynecology, orthopaedics, general surgery, internal medicine, and other specialties will be considered. The program of study will consist of lectures, demonstrations, and laboratory work. Microscope required (limited number available on loan). Weight: 4. *Fetter*

PTH-241(B). Systemic Pathology. This will be a lecture course that will go into more detail than the core course in pathology. It will be given especially for students taking the Program in Pathology, but will be available as a separate elective for individual students. Lectures will be from 4-5 each Monday and Wednesday. Different topics will be included in the four eight-week long terms. Weight: 1. *Hackel, Vogel and Bradford*

PTH-281(B). Cytopathology Preceptorship. This course consists of a full-time rotation by the student in the diagnostic cytopathology laboratories. By working with the laboratory staff, the student will explore in detail the role played by exfoliative cytopathology in the diagnosis of disease. Although not a requirement, the student will be encouraged to pursue special research projects. Weight: 8. *Johnston, Bossen, Bigner, and staff*

PTH-321(B). Hormone and Tissue Interactions in Differentiation and Disease. Hormones and other biochemical signals involved in the differentiated state including amino acids, polypeptide and steroid hormone response in insects, snails, and higher vertebrates will be discussed in terms of the new biotechnology used to elucidate mechanisms of information transfer and gene control at the level of the chromatin. Cell-cell, cell-matrix, and hormonal interactions will be considered as control elements in development and differentiation. Interactions involving the cell surface, the basal lamina, and extracellular matrix will be discussed in terms of differentiation of limb bud/pancreas/lymphocyte/and neural tissue. Conferences will include hormone control of sex differentiation, ectopic hormone biosynthesis, and endocrine related diseases. The course is designed as an extension of the course Differentiation in Development and Disease. Weight: 2, Max: 5. *K. McCarty, Sr., B. Kaufman, K. McCarty, Jr.*

PTH-342(B). Special Topics in Pathology. Special problems in pathology will be studied with a member of the senior staff; the subject matter will be individually arranged. Permission of the instructor required. Weight: 1-16. *Jennings and staff*

PTH-346(B). * Subcellular and Molecular Pathology. This course is designed for students wishing to broaden their knowledge of cellular structure and cellular pathology. A series of lectures and seminars will be presented on the alterations in cellular structure and associated function that accompany cell injury. Ultrastructural changes in selected human diseases will be discussed in detail with emphasis on diagnosis and pathogenesis. Weight: 2. *Jennings, Shelburne, and Sommer*

PTH-348(B). Practical Surgical Pathology. This course will be in the form of an apprenticeship in which the student will work closely with the resident in the actual preparation and diagnosis of tissue changes. Microscope required (limited number available on loan). Weight: 8. *Rossen and staff*

PTH-353(B). * Neuropathology. A view of neuropathology that emphasizes clinicopathologic correlation. Weight: 3. *Vogel and staff*

PTH-359(B). * Fundamentals of Electron Microscopy. Emphasis will be placed on the theory and application of electron microscopy to ultrastructural pathology. The methods relating to electron microscopy, as well as X-ray microanalysis and ion microscopy, will be considered. Laboratory experience will be included. Weight: 3. *Shelburne and Sommer*

PTH-362(B). * Pathology of the Kidney. This course is a comprehensive study of pathological, immunological, and clinical features of the various types of glomerulonephritis, nephrotic syndrome, and pyelonephritis, as well as of metabolic, congenital, and neoplastic renal disorders. Lectures will be supplemented with gross and microscopic specimens, demonstrations, clinicopathological discussions and student seminars. Weight: 3. *Sanfilippo, and Jennings*

PTH-364(B). Skeletal Pathology. Special problems in skeletal pathology will be dealt with beginning with a discussion of the development of connective tissue. Special emphasis on bone tumors, metabolic diseases, and traumatic problems will be considered. Weight: 2. *Harrelson*

PTH-366(B). * Pulmonary Pathology and Pathophysiology. Emphasis will be on pulmonary pathology and pathophysiology of infectious, metabolic, environmental, and neoplastic diseases, and certain diseases of unknown etiology (e.g., sarcoid, alveolar proteinosis, etc.). Weight: 3. *Pratt and Roggli*

PTH-371(B). The Laboratory Basis for Clinical Medicine. This course will emphasize evaluation and interpretation of laboratory data relative to pathophysiologic processes. Development of judgment and selectivity in utilizing laboratory tests will be taught. Course will consist of lectures and conferences. Clinicopathologic correlation will be stressed by detailed case studies of specific patients. Weight: 2. *Gaede, Widmann, Pizzo, and Zwadyk*

PTH-372(B). Environmental Diseases. The course features guest lecturers and student presentations to cover examples of disease produced by technological exploitation of the earth and "life study." Subjects include population, respiration-air and ocean, and examples of diseases due to asbestos, lead, mercury, hydrocarbons, carcinogens, organic dusts, DDT, cigarette smoke, etc. Weight: 2. *Pratt and Lynn*

PTH-373(B). Diagnostic Immunopathology. The course reviews diagnostic and laboratory procedures used in evaluating immunologic diseases; especially autoimmune, infectious, immunodeficiency, immunoproliferative, and hypersensitivity disorders. Emphasis is placed on the theoretical and practical aspects of testing procedures and their proper interpretation. Weight: 2. *Sanfilippo, Zwadyk, Borowitz, and Wolfe*

PTH-374(B). * Pulmonary Structure and Function Seminar. Current and exemplary pathological material on lungs, including gross, histologic, and electron microscopic data, is correlated with *in vitro* function and clinical features; physiological measurements; and roentgenographic findings. The structural features of the types of reaction of lung cells to injury are interpreted against this background. Such demonstration material is correlated by lectures. Weight: 1. *Pratt, Lynn, and Roggli*

PTH-378(B). Seminars in Hematology. This is a systematic survey of the pathophysiology and morphology of human hematological diseases. Each student will survey the literature on several topics and prepare an oral presentation which will be critically discussed by the group. Opportunity for experience in blood, marrow, and lymph node analysis will be available. Weight: 2. *Wittels*

PTH-380(B). Surgical Pathology with Emphasis on Electron Microscopy. This course will be in the form of an apprenticeship in which the student will become engaged in the actual preparation and diagnosis of tissue changes using both light and electron microscopy. The student will, of necessity, learn how to operate the electron microscope. Weight: 8. *Shelburne and Vollmer*

Pediatrics

Wilburt C. Davison Professor Samuel L. Katz, M.D. (Harvard, 1952), *Chairman*.

Professors: Page A. W. Anderson, M.D. (Duke, 1963); James B. Sidbury Professor Rebecca H. Buckley, M.D. (North Carolina at Chapel Hill, 1958); John M. Falleta, M.D. (Kansas, 1966); Howard Filston, M.D. (Western Reserve, 1962); Thomas E. Frothingham, M.D. (Harvard, 1951); Herman Grossman, M.D. (Columbia, 1953); Stuart Handwerger, M.D. (Maryland, 1964); Donald Kirks, M.D. (Washington Univ., 1968); Charles R. Roe, M.D. (Duke, 1964); James B. Duke Professor Madison S. Spach, M.D. (Duke, 1954); Alexander Spock, M.D. (Maryland, 1955); Catherine M. Wilfert, M.D. (Harvard, 1962).

Associate Professors: Roger C. Barr, Ph.D. (Duke, 1968); Jane E. Brazy, M.D. (Washington Univ., 1972); Rosalind Coleman, M.D. (Western Reserve, 1969); Bernard J. D'Souza, M.B., Ch.B. (Makerere, Kampala, Uganda, 1967); Seymour Grufferman, M.D. (New York at Syracuse, 1964); Dr.P.H.(Harvard, 1979); Laura T. Gutman, M.D. (Stanford, 1963); Allen P. Killam, M.D. (Texas at Galveston, 1960); Lowell King, M.D. (Johns Hopkins, 1956); Thomas R. Kinney, M.D. (Duke, 1970); Deborah Kredich, M.D. (Michigan, 1962); David R. Merten, M.D. (Cincinnati, 1956); Jonathan I. Scheinman, M.D. (Illinois, 1966); Gerald Serwer, M.D. (Duke, 1971); Raymond Sturmer, M.D. (Georgetown, 1968).

Assistant Professors: Brenda E. Armstrong, M.D. (St. Louis, 1974); Edmond C. Bloch, M.B. (Univ. of Cape Town, South Africa, 1946); William D. Bradford, M.D. (Western Reserve, 1958); Y. T. Chen, M.D. (Taiwan Univ., 1973), Ph.D. (Columbia, 1978); Peter C. English, M.D., Ph.D. (Duke, 1975); Michael Freemark, M.D. (Duke, 1976); Henry Friedman, M.D. (New York at Syracuse, 1977); Nan Friedman, M.D. (Med. Coll. of Virginia, 1975); Patricia Gerber, M.D. (Wisconsin, 1976); William Greeley, M.D. (Texas at Houston, 1976); Harold J. Harris, M.D. (Long Island Coll. of Med., Brooklyn, 1949); J. David Jones, M.D. (Duke, 1954); Stephen G. Kahler, M.D. (Duke, 1973); Raymond S. Kandt, M.D. (Virginia, 1976); Sue Y. S. Kimm, M.D. (Yale, 1964); Joanne Kurtzberg, M.D. (New York Med. Coll., 1976); Jeannine G. Leatherman, M.D. (Vermont, 1978); Darrell V. Lewis, M.D. (Minnesota, 1969); Mary Ann Morris, M.D. (Arkansas, 1972); Aglaia N. O'Quinn, M.D. (Duke, 1965); Shirley K. Osterhout, M.D. (Duke, 1957); M. Henderson Rourke, Jr., M.D. (Pennsylvania, 1963); Hugh Sampson, M.D. (New York at Buffalo, 1975); Richard I. Schiff, M.D., Ph.D. (Duke, 1976); Robert J. Thompson, Jr., Ph.D. (North Dakota, 1971); Mary E. Vernon, M.D. (Columbia, 1976); Rita Vileisis, M.D. (Northwestern, 1975); Gordon Worley, M.D. (Harvard, 1973).

Associates: Edward G. Buckley, M.D. (Duke, 1977); Lester J. Fahrner, M.D. (Illinois, 1979); Robert D. Fitch, M.D. (Duke, 1976); Ross McKinney, M.D. (Rochester, 1979); Jerry Oakes, M.D. (Duke, 1972); Claire Selzer, Ph.D. (Kansas, 1983); Deborah Squire, M.D. (Northwestern, 1978).

Clinical Professors: William J. A. DeMaria, M.D. (Duke, 1948); W. Samuel Yancey, M.D. (Duke, 1965).

Associate Clinical Professors: Allen Cato, M.D. (Duke 1969); William L. London, M.D. (North Carolina at Chapel Hill, 1955); Howard H. Loughlin, M.D. (Pennsylvania, 1970); A. W. Renuart III, M.D. (Duke, 1955); Evelyn Schmidt, M.D. (Duke, 1951).

Assistant Clinical Professors: Clarence Bailey, M.D. (North Carolina at Chapel Hill, 1955); Dennis Clements, M.D. (Rochester, 1973); Joanna S. Dalldorf, M.D. (Cornwall, 1958); James S. Hall, M.D. (Duke, 1957); Alvin H. Hartness, M.D. (Bowman Gray, 1965); Marcia Herman-Giddens, P.A. (Duke, 1968); Sandra Lehrman, M.D. (Brown, 1976); Thomas M. McCutchen, M.D. (Vanderbilt, 1963); Charles B. Neal, M.D. (Duke, 1955); Nicholas A. Patrone, M.D. (Loyola, 1976); John C. Pollard, M.D. (Virginia, 1968); William C. Powell, M.D. (Bowman Gray, 1952); Jimmie L. Rhyne, M.D. (Maryland, 1948); A. Douglas Rice, M.D. (Duke, 1951); James B. Rouse, M.D. (Duke, 1965); Christine Rudd, Pharm. D. (North Carolina at Chapel Hill, 1983); Robert J. Senior, M.D. (Jefferson, 1955); Frank S. Shaw, M.D. (Pennsylvania, 1959); Charles I. Sheaffer, M.D. (Western Reserve, 1958); S. Winston Singleton, M.B. (Manchester, England, 1952); Fred R. Stowe, M.D. (North Carolina at Chapel Hill, 1958); Robert W. Warren, M.D., Ph.D. (Washington Univ., 1978).

Clinical Associates: Lillis Altshuller, M.D. (Cincinnati, 1960); Joanne Barton, M.Sc. (Kentucky, 1974); Mary Jane Burns, M.S.W. (North Carolina at Chapel Hill, 1974); Meade R. Christian, Jr., M.D. (Western Reserve, 1967); William G. Conley, M.D. (Med. Coll. of Virginia, 1960); W. LaDell Douglas, M.D. (Georgetown, 1974); Muki W. Fairchild, M.S.W. (North Carolina at Chapel Hill, 1976); Jean Findlay, M.B. (Aberdeen Univ. Med. Sch. Scotland, 1970); Gregory Fisher, M.D. (South Florida, 1976); Richard Gugelmann, M.D. (Texas at Galveston, 1971); Larry C. Harris, M.D. (Duke, 1977); Rufus McP. Herring, Jr., M.D. (Bowman Gray, 1969); Mary Ellen Isaacs, M.A. (Northwestern, 1979); Jennifer L. Lail, M.D. (Kentucky, 1978); Charles W. Lallier, M.D. (Virginia, 1981); Pierre LeMaster,

M.D. (Florida, 1971); Allyn McConkie, M.S.W. (Arkansas, 1980); Brandy McDaniel, M.S.W. (North Carolina at Chapel Hill, 1979); Larry Mumford, M.D. (North Carolina at Chapel Hill, 1967); Susan Quinn-Pierce, M.S.W. (North Carolina at Chapel Hill, 1972); Craig R. Stenberg, Ph.D. (Denver, 1982); Janice Stratton, M.D. (Tulane, 1961); A. William Taub, M.S.W. (North Carolina at Chapel Hill, 1981); Joseph Whatley (Duke, 1958); Mary Ann Zetes, M.D. (Dartmouth, 1982).

Research Associates: Janet Barrett, B.S. (East Carolina, 1965); Junken He, Ph.D. (Fu Dan Univ., Shanghai, 1968).

Medical Research Professor: James T. Lowman, M.D. (Arkansas, 1958).

Associate Medical Research Professor: David Millington, Ph.D. (Liverpool, England, 1969).

Assistant Medical Research Professors: Dianne Y. Bell, Ph.D. (North Carolina State Univ., 1976);

Nancy Henshaw, Ph.D. (North Carolina at Chapel Hill, 1983); Leslie Sargent Jones, Ph.D. (Northwestern, 1981).

Emeriti: Jay M. Arena, M.D.; William Cleland, M.D.; Susan C. Dees, M.D.; Jerome S. Harris, M.D.; Angus M. McBryde, M.D.; Bailey D. Webb, M.D., Ph.D.

Required Course

PED-205. The basic course in pediatrics for all students—is an eight-week clerkship in the second year. Its principal aim is to provide an exposure to the field of child health. The student has a varying series of experiences which should give a grasp of the concepts that underlie the discipline. Goals should be to acquire familiarity and competence with the basic tools of information-gathering—the history, physical examination, and laboratory data and to develop an approach to the integration of this material for the solution of problems of health and illness in infancy, childhood, and adolescence. This should be accomplished with continuing reference to the basic principles of pathophysiology encountered in the first year courses.

Those patients to whom the student is assigned will provide the focus for case studies. In addition to the careful history and physical examination which must be recorded, the student is expected to organize an appropriate differential diagnosis and to seek and read pertinent reference material relevant to each patient. The student should learn to present each case verbally in an organized and succinct fashion, to follow the patient's progress, and to interpret all studies which are performed. The student is expected to learn from a number of sources: standard textbooks and journals, current publications and conferences, and also from people—house staff, faculty, nurses, parents, and all others with whom contact is made in the clinical setting.

Objectives should also include an understanding of the roles played in pediatrics by other members of the health care team, both in the ambulatory and hospital settings. Patient care may include nurse, social worker, recreation therapist, psychologist, physiotherapist, dietitian, and/or others. The eight weeks will be divided to include time into several of the following settings: (a) Duke outpatient clinics and emergency room, (b) Duke inpatient, (c) Durham County General Hospital and (d) Duke nurseries, (e) community clinics and private pediatrician's offices.

Electives

PED-210(C). Advanced General Pediatrics. The senior student negotiates the schedule before the beginning of the course. In the Duke clinics, the student may become acquainted with most pediatric problems while beyond the walls of the hospital, there are opportunities for the student to participate in child health activities in the community in collaboration with a variety of child-serving professionals. Students are encouraged to select an area for in-depth examination, active participation, and the preparation of a report according to their interests, backgrounds, and anticipated career goals. Examples of available areas are behavior-development, adolescent medicine, rheumatology, child health, child abuse, and many others. Weight: up to 8. *Frothingham and staff*

PED-211(C). Pediatric Infectious Diseases. This course will provide experience in the clinical and laboratory diagnosis of infectious diseases and in their therapy. The student works closely with the infectious disease fellow and participates actively in evaluation of patients. There is opportunity to gain experience in a laboratory setting (bacteriology, virology). Weight: 4 or 8. *Wilfert, McKinney, Gutman, Lehrman, and Katz*

PED-215(C). Endocrine Disorders in Children. Students participate in the pediatric endocrine and pediatric diabetes clinics and in the inpatient activities of the endocrine division. Students also participate in the endocrine journal club and interdepartmental endocrine conferences. Emphasis is placed on the evaluation of growth and sexual development as indices of endocrine status during childhood. Weight: 4 or 8. *Handwerker, Morris, Friedman, and Freemark*

PED-216(C). Interdisciplinary Seminar in Clinical Oncology. Students will be presented with a comprehensive review of clinical oncology, including the epidemiology, pathogenesis, clinical-pathologic correlations, treatment, and prognosis for most human cancers. Relationships between basic science aspects and clinical medicine will be emphasized. Weight: 2. *Falletta and Michalopoulos*

PED-217(C). Pediatric Hematology and Oncology. Includes all aspects of clinical and laboratory pediatric hematology, as well as the diagnostic evaluation, care, and treatment of patients with malignant diseases. Emphasis will be placed on fundamental concepts. There will be daily ward rounds, three weekly clinics, conferences and seminars, as well as assigned reading. Students will be encouraged to engage in some individual clinical or laboratory project during the period of the course. Weight: 4 or 8. *Falletta, Kinney, Kurtzburg and Friedman*

PED-221(C). Poison Control. Primarily a seminar course with one two-hour conference per week scheduled for student discussion on assigned topics. The student may participate in clinical functions of the center and if desired may be on call for the treatment of these cases in the emergency room or the ward. This is a student-oriented teaching program and individual projects on the subject may also be carried out. Weight: 2. *Shirley Osterhout*

PED-225(C). * Neonatology. Students will have patient care responsibilities and experiences in the nursery service, either Duke North ICN or Duke South nurseries. The course consists of participation in direct patient care under the supervision of the faculty and house staff. Emphasis is placed on the initiation of parent-child relationships, the assessment of and stabilization of stressed neonates, and the management of neonatal illnesses. No other courses are to be taken in conjunction with PED-225(C). Weight: 4. *Brazey, O'Shea, Leatherman, and Vileisis*

PED-227(C). Behavioral Aspects of Pediatrics. This course will offer trainees the opportunity to work as a part of an interdisciplinary team in diagnosing and treating children and adolescents (ages two to twenty-one) with a variety of psychiatric and psychosocial problems. Presenting problems might include a full spectrum of childhood and adolescent disorders: anorexia nervosa, bulimia, enuresis, encopresis, school phobia, psychosomatic disorders, tourette syndrome, suicidal and acting-out adolescents, chronically or terminally ill children, and child abuse and neglect cases. Trainees will be taught and will clinically apply principles of child and adolescent development and psychoanalytic family systems theory. The trainee will be involved in child, parent, and family interviews and treatment and will function as an integral part of the treatment team to experientially learn about the diagnosis and treatment of a wide variety of child and adolescent disorders. There will be an opportunity to be involved in the inpatient and outpatient treatment process on pediatric and adolescent psychiatric wards. (See also PSC-227.) Weight: 2-6. *Jones, Lee, Yancy, and Mrs. Anderson*

PED-231(C). Clinical Pediatric Cardiology. Provides an intensive learning experience in clinical diagnosis and management of childhood heart disease. Emphasis is placed on the preoperative and postoperative management of children with operable heart disease as well as upon the management of children with nonoperable heart disease. Finally, the student is exposed to pediatric acute care medicine and modalities available to maintain cardiovascular function in the extremely ill child. Scope: history, physical examination, and special diagnostic techniques (electrocardiography, phonocardiography, echocardiography, cardiac catheterization, and cineangiocardiology). Students are urged to meet with one of the instructors prior to enrolling in this course. Prerequisites: PED-205(C). Weight: 8, 4 (only with special permission of instructors). *Armstrong, and Anderson*

PED-232(C). Preventive Cardiology: Clinical Applications. The aim of this course is to introduce clinical application of the current knowledge in preventive cardiology. The course will consist of didactic sessions and clinical case illustration. Topics will include epidemiology of CAD; CAD risk factor modification, such as clinical management of hyperlipidemias, stress management, physical fitness training; as well as the use of new technologies in early diagnosis of CAD and the current status of bypass surgery, etc. Weight: 1. *Kimm and guest speakers*

PED-233(C). Allergy and Clinical Immunology. Clinical evaluation and practice in use and methods of diagnosis and treatment of allergic and immunologic disorders including immunologic deficiency states; and autoimmune disorders. Scope: history, physical examination, skin testing and a variety of clinical immunologic tests. Weight: 4 or 8. *R. Buckley, Sampson, Schiff, Warren and Kredich*

PED-234(C). Clinical Genetics and Metabolism. The student will become familiar with evaluation and management of various genetic disorders, including diagnostic techniques, laboratory methods, and genetic counseling. Experience in internal medicine and prenatal diagnosis is flexible, depending on the interests of the student. May take with BCH-234(B). Weight: 4. *Kahler*

PED-241(C). Pediatric Nephrology. Course is designed to provide experience in diagnosis, interpretations of laboratory tests, natural history, and treatment of acute and chronic disorders of the kidney in children. Students are also exposed to the management of fluid and electrolyte disorders in infants and children. Weight: 4 or 8. *Scheinman*

PED-243(C). Adolescent Medicine. Students will see adolescents in youth clinic on Monday afternoons. Emphasis to be placed on the behavioral and developmental aspects of adolescence, drug abuse, and the pregnant teenager. Tutorial and supervisory time to discuss specific patients and pertinent literature will be arranged. Weight: 2. *Fairchild*

PED-250(C). Advanced General Pediatrics, Duke North Wards. This advanced course is designed to allow student a four-week experience as a subintern. Under supervision of faculty attendings and resident house staff the senior student will assume primary responsibility for the care of children admitted to the Duke inpatient service. Emphasis will be placed on the development of a pathophysiologic approach to the diagnosis and therapy of a broad spectrum of pediatric illnesses. Advanced concepts in pediatrics will be emphasized. Students will rotate night call with resident pediatric house staff. Weight: 4. *Armstrong*

PED-281(C). Pediatric Neurology. Students will examine both hospitalized and ambulatory patients with neurological disorders. Emphasis is placed on the neurological history, examination, and the investigation and management techniques of nervous system disorders of childhood. Weight: 8. *D'Souza*

Pharmacology

Professor Norman Kirshner, Ph.D. (Pennsylvania State, 1952), *Chairman*.

Professors: Mohamed Abou-Donia, Ph.D. (California at Berkeley, 1966); Everett H. Ellinwood, M.D. (North Carolina at Chapel Hill, 1959); Leon Lack, Ph.D. (Columbia, 1953); Daniel B. Menzel, Ph.D. (California at Berkeley, 1962); Elliott Mills, Ph.D. (Columbia, 1964); Athos Ottolenghi, M.D. (Univ. of Pavia, 1946); Gerald M. Rosen, Ph.D. (Clarkson, 1969); Saul M. Schanberg, M.D. (Yale, 1964), Ph.D. (Yale, 1961); Theodore Slotkin, Ph.D. (Rochester, 1970); Walter D. Watkins, Ph.D. (Michigan, 1971), M.D. (Colorado, 1975); Pelham Wilder, Ph.D. (Harvard, 1950).

Associate Professors: Thorir D. Bjornsson, M.D. (Univ. of Iceland, 1971); James Norman Davis, M.D. (Cornell, 1965); Laura E. Gutman, M.D. (Stanford, 1962); Cynthia M. Kuhn, Ph.D. (Duke, 1975); Julian Victor Nadler, Ph.D. (Yale, 1972); Harold C. Strauss, M.D., C.M. (McGill Univ., 1964); A. Richard Whorton, Ph.D. (Vanderbilt, 1975).

Assistant Professors: Warner M. Burch, Jr., M.D. (Bowman Gray, 1971); James O. McNamara, M.D. (Michigan, 1968); Charles B. Nemeroff, Ph.D. (North Carolina at Chapel Hill, 1976), M.D. (North Carolina at Chapel Hill, 1981); Stephen C. Strom, Ph.D. (Kansas, 1978).

Medical Research Professor: Gertrude Elion, D.Sc. (George Washington, 1969).

Medical Research Associate Professor: Wilkie A. Wilson, Ph.D. (Duke, 1971).

Medical Research Assistant Professors: Jorge Bartolomae, Ph.D. (Univ. of Chile, 1978); Elmer J. Rauckman, Ph.D. (Duke, 1976); Peter G. Smith, Ph.D. (Duke, 1978); Ying-Fu Su, Ph.D. (Colorado, 1978); Robert L. Wolpert, Ph.D. (Princeton, 1976).

Adjunct Professors: Kwen-Jen Chang, Ph.D. (New York at Buffalo, 1972); Pedro Cuatrecasas, M.D. (Washington Univ., 1962); Leon Golberg, D. Sc. (Univ. of Witwatersrand, 1946); Robert A. Neal, Ph.D. (Vanderbilt, 1963); Charles A. Nichol, Ph.D. (Wisconsin, 1949).

Adjunct Associate Professors: Donald E. Gardner, Ph.D. (Cincinnati, 1971); Humberto Viveros, M.D. (Univ. of Chile, 1962).

Adjunct Assistant Professors: Robert E. Desjardins, M.D. (Loyola, 1971); Richard J. Kavlock, Ph.D. (Miami, 1977); Christopher Lau, Ph.D. (Duke, 1982).

Emeritus: Frederick Bernheim, Ph.D.

Required Course

PHR-200. Pharmacology: Mode of Action of Drugs. A basic course in pharmacology describing the action of drugs in terms of biochemical and physiological processes, and the rationale for their use in clinical therapy. Four lectures, one clinical correlation and one conference per week. 4 units. *Staff*

Electives

PHR-219(B). Tutorial in Pharmacology. Guided independent study of original literature and/or laboratory experience. Open to all students; required of those electing a preclinical base in the Department of Pharmacology. Weight: 1-8. *Staff*

PHR-256(B). Human Nutrition. Principles of nutrition related to clinical practice. Emphasis will be placed on the essentials of nutrition using human disease states and maturation (reproduction, growth, and aging) as a basis for instruction. Topics will include nutritional requirements during pregnancy, lactation, infancy, and old age; metabolic disorders and diseased states. A major section will include the use of perenteral nutrition in the treatment of cancer. Weight: 3. *Manzel*

PHR-270(B).* Neurobiology I. Also listed as PHS-270(B). Weight: 3. *Moore, Kirshner, Robertson, Corless, and Marchase*

PHR-301(B). Physical Chemistry of Aqueous Solutions. An intensive study of the major topics of aqueous solutions including stoichiometry, chemical equilibrium, elementary thermodynamics, experimental kinetics, and electrochemistry. Practical problem sets and problem review sessions will represent a major portion of the course. Weight: 3. *Wilder*

PHR-330(B). Pharmacological Basis of Clinical Medicine. This course consists of a detailed analysis of the mechanism of action and rationale for use of pharmacologic agents in disease states. Weight 4. *Bjornsson and staff*

PHR-331(B). * Laboratory Methods in Pharmacology. Prerequisites: permission of instructor. Weight: 6. *Staff*

PHR-333(B). * Principles of Pharmacology and Toxicology 1. Drug absorption, distribution, excretion and metabolism, basic and clinical pharmacokinetics, Hansch correlation of structure and activity, stereo-chemistry, and drug action. Weight: 3. *Slotkin and staff*

PHR-334(B). * Principles of Pharmacology and Toxicology 2. Drug receptor theory and its practical applications, pharmacokinetics and pharmacodynamics of toxic substances, mechanisms of toxicity, adverse drug reactions and interactions. Weight: 3. *Rosen and staff*

PHR-354(B). * Mammalian Toxicology. Principles of toxicology as related to man. Emphasis will be placed on the molecular basis for toxicity of chemical and physical agents. Subjects will include metabolism and pharmacokinetics; toxicologic evaluation; pesticides; metals and industrial chemicals, solvent toxicity, food additives and natural toxins; radiation and radioactive materials; mutagenicity, pathology and toxicology, carcinogenicity, teratogenicity, toxicology of the reproductive system; pulmonary toxicology, toxicology of the kidney, liver toxicology and detoxification mechanisms, neurotoxicology, behavioral toxicology; industrial toxicology, toxicology of the blood, toxicology of the eye, social poisons, management of poisoning, epidemiology, risk assessment, and regulatory toxicology. Weight: 4. *Abou-Donia and staff*

PHR-360(B). Neuropharmacology. Seminar-lecture course emphasizing neurotransmitter mechanisms and the mechanism of action of drugs used to modify nervous system function. Material will be drawn from the recent literature. Weight: 3. *Nadler*

PHR-364(B). Neurotoxicology. Adverse effects of drugs and toxicants on the central and peripheral nervous system. Target sites, pathophysiology, and factors affecting toxicity. Experimental methods for detection and screening of neurotoxic chemicals. Screening and assessment of neurotoxicity in people. Weight: 3. *Abou-Donia*

PHR-372(B). Research in Pharmacology. Laboratory investigation in various areas of pharmacology. Credit to be arranged. *Staff*

PHR-417(B). Cellular Endocrinology. Current concepts of the mechanisms of action of hormones at the cellular level; including hormone-receptor interactions; secondary messenger, regulation of protein synthesis, growth and differentiation, control of salt and water balance, regulation of substrate storage and mobilization, modulation or hormone secretion. Weight: 2. *Caron, N. Anderson, Padilla, and guest faculties*

Physiology

Professor: James B. Duke Professor Edward A. Johnson, M.D. (Univ. of Sheffield, 1953), *Chairman*.

Professors: James B. Duke Professor Jacob J. Blum, Ph.D. (Chicago, 1952); Irving T. Diamond, Ph.D. (Chicago, 1953); John W. Gutknecht, Ph.D. (North Carolina at Chapel Hill, 1963); Diane Hatchell, Ph.D. (Marquette, 1968); Frans F. Jöbsis, Ph.D. (Michigan, 1958); Melvyn Lieberman, Ph.D. (State Univ. of New York, 1964); Lazaro J. Mandel, Ph.D. (Pennsylvania, 1969); John W. Moore, Ph.D. (Virginia, 1954); Robert Plonsey, Ph.D. (California, 1956); Jacqueline A. Reynolds, Ph.D. (Washington Univ., 1963); George G. Somjen, M.D. (New Zealand, 1961); Joachim R. Sommer, M.D. (Munich, 1951); Madison S. Spach, M.D. (Duke, 1954); James B. Duke Professor Charles Tanford, Ph.D. (Princeton, 1947).

Associate Professors: Onyekwere Akwari, M.D. (Southern California, 1970); Nels C. Anderson, Ph.D. (Purdue, 1964); Peter B. Bennett, Ph.D. (Univ. of Southampton, 1964); Robert P. Erickson, Ph.D. (Brown, 1958); Joseph C. Greenfield, M.D. (Emory, 1956); J. Mailen Kootsey, Ph.D. (Brown, 1966); J. A. Kylstra, M.D. (Leiden, Holland, 1952); Charles Mansbach, M.D. (New York, 1963); Thomas J. McManus, M.D. (Boston, 1955); Elliott Mills, Ph.D. (Columbia, 1964); George M. Padilla,

Ph.D. (California at Los Angeles, 1960); Michael K. Reedy, M.D. (Washington, 1973); David W. Schomberg, Ph.D. (Purdue, 1965); Sidney Simon, Ph.D. (Northwestern, 1973); Myron Wolbarsht, Ph.D. (Johns Hopkins, 1958).

Assistant Professors: Page A. W. Anderson, M.D. (Duke, 1963); Enrico M. Camporesi, M.D. (Univ. of Milan, Italy, 1970); Marc G. Caron, Ph.D. (Miami, 1973); Vincent W. Dennis, M.D. (Georgetown, 1966); Marc K. Drezner, M.D. (Pittsburgh, 1970); Stuart Handwerker, M.D. (Maryland, 1964); Jeffrey V. May, Ph.D. (Rhode Island, 1979); J. Scott Rankin, M.D. (Tennessee, 1969); Judith L. Swain, M.D. (California at San Diego, 1974); Andrew G. Wallace, M.D. (Duke, 1959); Andrew Wechsler, M.D. (State Univ. of New York, 1964); Robert Sanders Williams, M.D. (Duke, 1973); William E. Yarger, M.D. (Baylor, 1971).

Medical Research Associate Professors: Joseph Bonaventura, Ph.D. (Texas at Austin, 1968); Celia Bonaventura, Ph.D. (Texas at Austin, 1968); Michael C. Kohn, Ph.D. (South Carolina, 1969); Avis Sylvia, Ph.D. (North Carolina at Chapel Hill, 1973).

Assistant Medical Research Professors: Gilbert Baumann, Dr.Sc. (Swiss Federal Inst. of Tech., 1968); Michael Hines, Ph.D. (Chicago, 1975); Ann LeFurgey, Ph.D. (North Carolina at Chapel Hill, 1976).

Adjunct Professor: Vladimir Petrow, D.Sc. (Univ. of London, 1947)

Adjunct Associate Professors: Russell Horres, Ph.D. (Duke, 1975); James M. Schooler, Jr., Ph.D. (Wisconsin, 1964).

Adjunct Assistant Professors: Thomas W. Anderson, Ph.D. (Duke, 1971); Reginald D. Carter, Ph.D. (Bowman Gray, 1970); Michael J. Galvin, Jr., Ph.D. (Georgia, 1975); Philip A. McHale, Ph.D. (Duke, 1975).

Required Courses

PHS-200. Medical Physiology. Lectures and conferences on cell and organ physiology. Human and medical aspects are stressed in clinical conferences. Required of first-year medical students; limited to other students whose training requires knowledge of human physiology as it pertains to medicine. Five lectures; one conference, small group discussions. Prerequisite: consent of course leader. 5 units. *Padilla and staff*

PHS-201. Basic Neurophysiology. A survey of neurophysiology with emphasis on medical application. Follows PHS-200 in a four-week period in January. Lectures, conferences, demonstrations, clinical presentations. Prerequisite: PHS-200 or equivalent. 2 units. *Somjen and staff*

Electives

PHS-217(B). * Membrane Transport. Basic principles of the transport of water and solutes across biological and model membranes. The course uses physicochemical principles to provide a comprehensive understanding of phenomena such as active and passive transport, energy barriers through membranes, surface effects, and ion selectivity. The methodology and conceptual framework for the study of transport is described with selected examples from bilayers, red blood cells, nerve and epithelia. Physical chemistry is recommended. Weight: 3. *Mandel and Simon*

PHS-219(B). Preceptorship in Physiology. Guided independent study of original literature and/or laboratory experience in physiology. Weight: 1 to 16. *Padilla and staff*

PHS-222(B). Respiratory System in Health and Disease. Primary emphasis is on the physiology of respiration. Topics covered include pulmonary mechanics; gas exchange; ventilation-perfusion relationships; central and peripheral regulation of ventilation; and respiratory responses to exercise, altitude, and hyperbaric environments. Weight: 2. *Camporesi and Kylstra*

PHS-270(B). * Neurobiology. Interdisciplinary approach to neuronal function at the cellular and molecular levels. Topics will include: subcellular structural organization, physiology and pharmacology of excitable membranes, impulse generation and conduction, neurotransmitters, proteins, pre- and postsynaptic organization and function. Weight: 3. *J. W. Moore, Kirshner, Robertson, Corless, and Marchase*

PHS-272(B). * Physiology of the Central Nervous System. Topics include: The central processing of sensory information; motor control, ions, and electric activity in the central nervous system; pathologic changes of function. In part lectures, in part seminar format (reading of original research articles; student presentations). Weight: 2. *Somjen*

PHS-320(B). Gastrointestinal Physiology. In this course the normal physiology, mechanisms of control, and transport characteristics of the human gastrointestinal tract and its associated glands (salivary, pancreas, liver) are presented. The mechanisms of secretion and reabsorption are treated at a cellular level. Clinical examples are presented to contrast normal function with pathophysiology. Weight: 2. *Mandel, Akwari, and staff*

PHS-321(B). * Renal Physiology. The composition and size of body fluid compartments and the regulation of the constituents of the plasma by the kidney is presented by lectures. Measurements of renal function including renal blood flow, tubular reabsorption and secretion, and acid-base regulation are discussed together with the theory of counter current exchange, ion transport in the kidney and hormonal control of renal function. Weight: 2. *Dennis and staff*

PHS-401(B). * Metabolic Physiology. The control of gluconeogenesis, protein degradation, the storage and mobilization of glycogen and of lipids will be examined both at cellular level (e.g., metabolite compartmentation, futile cycling, enzyme modification) and in terms of interactions between tissues such as liver, kidney, and muscle. Strategies for metabolic adaptation to exercise, cold environment, starvation, obesity, and birth will be discussed. Weight: 3. *Blum*

PHS-411(B). Molecular and Cellular Bases of Differentiation. Emphasis is placed on the biochemistry of the cell surface as the basis of cell recognition, control of cell cycle, and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in light of new concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone induction of differentiation and development. The course is designed to study the phenomena of development and differentiation and has been organized on a multidisciplinary level. The course is part of the lecture series of development and differentiation study program, DDS-201(B). Weight: 3-4. *Padilla, McCarty, Counce, and Kaufman*

PHS-417(B). Cellular Endocrinology. Also listed as PHR-417B. Current concepts of the mechanisms of action of hormones at the cellular level; including hormone-receptor interactions; secondary messenger systems for hormones; mechanisms of regulation of hormone responsiveness; regulation of growth, differentiation and proliferation; cellular and electrophysiological mechanisms of secretory stimulus sensing and transduction; systems approach to feedback regulation and information transfer in an endocrine system. Lectures by local and outside clinical faculty will stress the clinical correlation of the basic concepts elaborated in the course. Students will be expected to participate in one seminar presentation. Weight: 2. *Caron, N. Anderson and Padilla*

PHS-418(B). * Reproductive Biology. An in-depth study of male and female reproductive processes including hypothalamic, pituitary, and gonadal control mechanisms as well as the physiology of pregnancy and parturition. Lectures by guest clinical faculty will emphasize the interface between basic science and clinical aspects. The lecture material in each section of the course is followed by seminar presentations which will contribute to ANA/PHS-424, a corequisite for the course. Also listed as ANA-418(B)*. Weight: 2. *N. Anderson, Schomberg, and Tyrey*

PHS-424(B). Reproductive Biology. Selected topics in reproductive biology

will be chosen for in-depth reading and analysis in the seminar format. The seminar is to be taken as a corequisite with ANA/PHS 418. (Also listed as Anatomy 424). Weight: 1. *Anderson, Schomberg, and Tyrey*

Psychiatry

Professor: Bernard J. Carroll, B.M., B.S. (Univ. of Melbourne, 1964); Ph.D. (Univ. of Melbourne, 1971), *Chairman*.

DIVISION OF BIOLOGICAL PSYCHIATRY

Professor: Bernard J. Carroll, B.M., B.S. (Univ. of Melbourne, 1964), Ph.D. (Univ. of Melbourne, 1971), *Acting Head of Division*.

Professors: James B. Duke Professor H. Keith H. Brodie, M.D. (Columbia, 1965); Everett H. Ellinwood, Jr., M.D. (North Carolina at Chapel Hill, 1959); C. William Erwin, M.D. (Texas, 1960); Robert L. Green, Jr., M.D. (Hahnemann, 1946); Roy J. Mathew, M.B. (Med. Coll. of Trivandrum, India, 1970); Saul M. Schanberg, M.D., Ph.D. (Yale, 1964); Theodore A. Slotkin, Ph.D. (Rochester, 1970); William K. Zung, M.D. (Texas, 1961).

Clinical Professor: Richard J. Wyatt, M.D. (Johns Hopkins, 1964).

Associate Professors: Jonathan Davidson, M.D. (Univ. Coll., London, 1976); Veli Markku Linnoila, M.D., Ph.D. (Helsinki, 1972); Steven Lipper, M.D., Ph.D. (Boston, 1972); Charles B. Nemeroff, M.D., Ph.D. (North Carolina at Chapel Hill, 1981); Richard Weiner, M.D., Ph.D. (Duke, 1973).

Assistant Professors: C. Edward Coffey, M.D. (Duke, 1979); Clinton D. Kilts, Ph.D. (Michigan, 1979); K. R. R. Krishnan, M.D. (Madras Med. Coll., 1978); Daniel C. Sullivan, M.D. (Vermont, 1970).

Clinical Assistant Professor: Joseph A. Johnston, Pharm. D. (Tennessee, 1976); Susan R. Levy, M.D. Rochester, 1979).

Adjunct Associate Professor: Jau-Shyon Hong, Ph.D. (Kansas, 1973).

Adjunct Assistant Professor: Neal R. Walker, Pharm. D. (Tennessee, 1976).

Assistant Medical Research Professors: Garth Bissitte, Ph.D. (North Carolina State, 1982).

Associate: Philip E. Hinkle, M.D. (Ohio, 1976).

Clinical Associates: Ugo Goetzl, M.D. (New York Med. Coll., 1968); J. Sidney Jones, M.D. (Bowman Gray, 1980).

Research Associates: Thomas J. Harbin, Ph.D. (Florida, 1981); Ananth Manepalli, M.D. (Kakatiya Med. Coll., India, 1977); J. Ken Nishita, Ph.D. (New York, 1983); Arlene Nikaido, Ph.D. (Hawaii, 1982).

DIVISION OF CHILD AND ADOLESCENT PSYCHIATRY

Professor: John G. Looney, M.D. (Southwestern, 1969), *Head of Division*.

Professor: John A. Fowler, M.D. (Bowman Gray, 1946).

Visiting Research Professor: Robert Coles, M.D. (Columbia, 1954).

Associate Professors: Harold J. Harris, M.D. (Long Island Med. Coll., 1949); J. David Jones, M.D. (Duke, 1954); Charles R. Keith, M.D. (Harvard, 1961).

Associate Clinical Professor: W. Sam Yancy, M.D. (Duke, 1961).

Assistant Professors: Marcelino Amaya, M.D. (Univ. Nacional Autonoma de Mexico, 1954); William B. Anderson, M.D. (Minnesota, 1948); Aglaia N. O'Quinn, M.D. (Duke, 1965).

Assistant Clinical Professor: Cesar Guajardo, M.D. (Univ. de Nuevo Leon, Mexico, 1961).

Associate: James E. Lee, M.D. (Duke, 1979).

Clinical Associates: Mary E. Berman, M.D. (Michigan, 1977); Thomas C. Cornwall, M.D. (Northwestern, 1970); Lucy T. Davis, Ed.D. (Columbia, 1955); Nancy J. Livingstone, M.D. (Duke, 1972); William Mackey, M.D. (Tennessee, 1969); Daniel T. Matthews, M.D. (Texas at Galveston, 1967); Daphne Rosenblitt, M.D. (Duke, 1974); Donald L. Rosenblitt, M.D. (Duke, 1973); Jean G. Spaulding, M.D. (Duke, 1972).

Instructors: Martha A. Graham, M.Ed. (North Carolina Central, 1974); Etta Leathers, M.E. (North Carolina Central, 1974); Alice F. Long, M.A. (Chicago, 1953); Joseph J. Simmons, M.A. (North Carolina Central, 1982); Barbara J. Smith, M.Ed. (North Carolina Central, 1983).

DIVISION OF COMMUNITY AND SOCIAL PSYCHIATRY

Associate Professor: Charles E. Llewellyn, M.D. (Med. Coll. of Virginia, 1946), *Head of Division*.

Professors: Kurt Back, Ph.D. (Massachusetts Inst. of Tech., 1949); Daniel G. Blazer, M.D. (Tennessee, 1969), Ph.D. (North Carolina at Chapel Hill, 1980); James H. Carter, M.D. (Howard, 1966); George L. Maddox, Ph.D. (Michigan, 1956); Erdman B. Palmore, Ph.D. (Columbia, 1959).

Associate Professors: Linda K. George, Ph.D. (Duke, 1975); Jacquelyne J. Jackson, Ph.D. (Ohio State, 1960).

Associate Clinical Professor: Nicholas Stratas, M.D. (Toronto, 1957).

Assistant Professors: David Larson, M.D. (Temple, 1973); Kenneth Rockwell, M.D. (Duke, 1961); Marvin S. Swartz, M.D. (Tufts, 1980).

Assistant Clinical Professors: James O. Hoover, M.D. (Iowa, 1966); Soong Lee, M.D. (Seoul,

1963); Khalil Tanas, M.D. (American Univ., Beirut, 1972);

Clinical Associates: Lesley Braasch, M.D. (New York, 1970); Jeffrey Brantley, M.D. (North Carolina at Chapel Hill, 1977); James N. Finch, M.D. (South Florida, 1981); Mark D. Glenn, M.D. (North Carolina at Chapel Hill, 1979); Sally Johnson, M.D. (Jefferson, 1976); Gordon Lavin, M.D. (Case Western Reserve, 1978); Mary Lou Melville, M.D. (Texas, 1971).

Instructors: Frantz Hershey, M.Ed. (Virginia, 1974); Peter H. Holden, M.D. (Univ. of Sheffield, 1948); James A. Smith III, M.D. (Howard, 1976); David R. Talley, M.D. (California at Berkeley, 1980).

Research Associates: James R. Bachar, Ph.D. (Pittsburgh, 1969); Gerda Fillenbaum, Ph.D., (London, 1966); Richard Landerman, Ph.D. (Duke, 1978); Dana C. Hughes, Ph.D. (Kansas, 1979).

Medical Research Associate: Connie Service, M.P.H. (North Carolina at Chapel Hill, 1979).

DIVISION OF INPATIENT SERVICES

Professor: Frederick T. Melges, M.D. (Columbia, 1961), *Head of Division*.

Professors: Frederick R. Hine, M.D. (Yale, 1949); John M. Rhoads, M.D. (Temple, 1943).

Clinical Associate Professor: Pedro J. Irigaray, M.D., (Univ. Nacional Autonoma de Mexico, 1955).

Assistant Professors: Allen Dyer, M.D. (Duke, 1972); Elliott B. Hammett, M.D. (Duke, 1966); Z. Daniel Pauk, M.D. (Iowa, 1956); Ervin Thompson, M.D. (Vanderbilt, 1972).

Assistant Clinical Professors: Jack W. Bonner III, M.D. (Southwestern, 1965); George W. Doss, M.D. (Southwestern, 1954); Christine Machemer, M.D. (Univ. of Freiburg, 1959); Eric Peterson, M.D. (Duke, 1971); Ingrid B. Pisetsky, M.D. (Albert Einstein, 1971); Richard Selman, M.D. (Emory, 1972); William J. Shamblin, M.D. (Alabama, 1971); Cynia B. Shimm, M.D. (Yale, 1950); William Taylor, M.D. (Med. Coll. of Virginia, 1959).

Associate in Psychiatric Recreation Therapy: Barbara A. Yoder, M.S. (Florida, 1970).

Clinical Associates: Joseph M. Cools, M.D. (Michigan, 1979); Joanna Gaworowski, M.D. (Med. Academy, Warsaw, Poland, 1967); Ernest Raba, M.D. (Texas, 1972); Roy M. Stein, M.D. (Duke, 1980); C. Phillip Stevenson, M.D. (South Carolina, 1978).

Clinical Associate Psychiatric Nursing: Patricia Webster, M.S.N. (North Carolina at Chapel Hill, 1976). Geropsychiatry J. P. Gibbons Professor: Ewald W. Busse, M.D. (Washington Univ., 1942).

Professors: Daniel T. Gianturco, M.D. (Buffalo, 1960); Adriaan Verwoerd, M.D. (Med. School of Amsterdam, 1952); Hsio-shan Wang, M.D. (National Taiwan Univ., 1953); Alan D. Whanger, M.D. (Duke, 1956).

DIVISION OF MEDICAL PSYCHOLOGY

Associate Professor: Robert J. Thompson, Ph.D. (North Dakota, 1971), *Head of Division*.

Professors: Irving A. Alexander, Ph.D. (Princeton, 1949); Robert C. Carson, Ph.D. (Northwestern, 1957); Edward Clifford, Ph.D. (Minnesota, 1957); Herbert F. Crovitz, Ph.D. (Duke, 1970); Martin Lakin, Ph.D. (Chicago, 1955); Susan Schiffman, Ph.D. (Duke, 1970); Richard Surwit, Ph.D. (McGill, 1972); Jay M. Weiss, Ph.D. (Yale, 1967).

Visiting Professor: W. Edward Craighead, Ph.D. (Chicago, 1979).

Clinical Professor: Darwin Dorr, Ph.D. (Florida State, 1969).

Adjunct Professor: Florence Kaslow, Ph.D. (Bryn Mawr, 1969).

Associate Professors: Elaine K. Crovitz, Ph.D. (Duke, 1964); Kay Hodges, Ph.D. (Maryland, 1974); Francis J. Keefe, Ph.D. (Ohio, 1975); Patrick Logue, Ph.D. (North Dakota, 1965); Gail R. Marsh, Ph.D. (Iowa, 1968); Robert Shipley, Ph.D. (Michigan State, 1972); Derek Shows, Ph.D. (Duke, 1967); Ilene Siegler, Ph.D. (Duke, 1974).

Adjunct Associate Professors: Lenore Behar, Ph.D. (Duke, 1973); Paul T. Costa, Jr. Ph.D. (Chicago, 1970).

Associate Medical Research Professor: Gerda Fillenbaum, Ph.D. (London, 1966).

Assistant Professors: James Blumenthal, Ph.D. (Washington, 1975); John Curry, Ph.D. (Catholic Univ., 1978); Steven Herman, Ph.D. (Duke, 1977); John S. Jordan, Ph.D. (Ohio State, 1984); John E. Lochman, Ph.D. (Connecticut, 1976); S. Claire Selzer, Ph.D. (Kansas, 1983); Anna L. Stout, Ph.D. (South Carolina, 1980); Russell F. Tomlinson, Ph.D. (Florida, 1957).

Assistant Clinical Professors: John Barrow, Ph.D. (Houston, 1971); Tracey Potts Carson, Ph.D. (Georgia, 1982); Jack Edinger, Ph.D. (Virginia Commonwealth, 1971); Mark Feinglos, M.D. (McGill, 1973); Richard A. Lucas, Ph.D. (North Carolina at Chapel Hill, 1972); Ronette L. Kolotkin, Ph.D. (Minnesota, 1978); Louise Lampron, Ph.D. (Tennessee, 1983); Richard Lucas, Ph.D. (North Carolina at Chapel Hill, 1972); Belinda R. Novik, Ph.D. (Michigan, 1978); Craig R. Stenberg, Ph.D. (Denver, 1982).

Assistant Medical Research Professors: Norman B. Anderson, Ph.D. (North Carolina at Greensboro, 1983); John Barefoot, Ph.D. (North Carolina at Chapel Hill, 1968); James Lane, Ph.D. (California at Los Angeles, 1979); David Madden, Ph.D. (California at Davis, 1977); James A. McCubbin, Ph.D., (North Carolina at Chapel Hill, 1980).

Adjunct Assistant Professors: Ralph Cooper, Ph.D. (Rutgers, 1973); Brad Fisher, Ph.D. (Alabama, 1976); Sandra Funk, Ph.D. (North Carolina at Chapel Hill, 1976); James A. Green, Ph.D. (North Carolina at Chapel Hill, 1979).

Clinical Associates: Hendey Buckley, Ph.D. (Duke, 1980); Karen M. Gil, Ph.D. (West Virginia, 1985); Jerri M. Oehler, Ph.D. (Duke, 1984); Elaine Revis, Ph.D. Case Western Reserve, 1984); Henry Roth, Ph.D. (Duke, 1977); Thomas Stearns, Ph.D. (Florida State, 1980); Joseph E. Talley, Ph.D. (Virginia, 1977); Deborah J. Woodford, Ph.D. (New York at Syracuse, 1981).

Instructors: Joseph Kertesz, M.A. (Michigan, 1973); Brian Stabler, Ph.D. (North Carolina at Chapel Hill, 1973); Steven Weincrot, Ph.D. (Denver, 1979).

Research Associates: Miriam Clifford, Ph.D. (Duke, 1970); Judy K. Plemons, Ph.D. (Pennsylvania State, 1981).

DIVISION OF OUTPATIENT SERVICES

Professor: Jesse O. Cavenar, Jr., M.D. (Arkansas, 1963), *Head of Division*.

Professor: David S. Werman, M.D. (Lausanne, Switzerland, 1952).

Associate Professor: David M. Hawkins, M.D. (Duke, 1966).

Associate Clinical Professor: John I. Walker, M.D. (Texas at Galveston, 1970).

Assistant Clinical Professors: Martin G. Groder, M.D. (Columbia, 1964); Leroy B. Lamm, M.D. (Bowman Gray, 1946); Robert D. Phillips, M.D. (Pennsylvania, 1952); Karl W. Stevenson, M.D. (Bowman Gray, 1966).

Associates: Harold S. Kudler, M.D. (New York, 1979); Steven Mahorney, M.D. (Louisiana, 1973).

Clinical Associates: Peter F. Adland, M.D. (Georgetown, 1975); Ernest R. Braasch, M.D. (State Univ. of New York, 1970); Lawrence Champion, M.D. (Wisconsin, 1973); George R. Martin, M.D. (South Carolina, 1974); Frank B. Miller, M.D. (Michigan, 1974); Peter Z. Perault, M.D. (Vermont, 1977); Erin G. Russell, M.D. (Louisville, 1980); James S. Wells, Jr., M.D. (North Carolina at Chapel Hill, 1977).

Instructor: Thomas Stephenson, M.D. (Michigan, 1972).

DIVISION OF PSYCHOSOMATIC MEDICINE

Professor: Redford B. Williams, Jr., M.D. (Yale, 1967).

Associate Professor: Allan A. Maltbie, M.D. (Emory, 1969).

Associate Clinical Professor: Harold R. Silberman, M.D. (Washington Univ., 1956).

Assistant Professor: Randal France, M.D. (Texas at Galveston, 1973).

Assistant Clinical Professors: Conrad Fulkerson, M.D. (Missouri, 1969); James T. Moore, M.D. (Missouri, 1971); Indira Varia, M.D. (Sha Med. College of India, 1968); Patricia A. Ziel, M.D. (Michigan, 1968).

Medical Research Assistant Professor: Patricia Cotanch, Ph.D. (Pittsburgh, 1979).

Associates: Douglas H. Finestone, M.D. (Med. Coll. of Virginia, 1979); Michael Volow, M.D. (Seton Hall, 1964); Michael D. Webb, M.D. (Texas at San Antonio, 1981).

Clinical Associates: Elizabeth H. King, M.D. (Duke, 1958); Bruce Neeley, M.D. (Med. Coll. of South Carolina, 1975); Linda H. Rubin, M.P.H. (North Carolina at Chapel Hill, 1978); James Weiss, M.D. (Louisiana, 1973); Robert Winton, M.D. (Vanderbilt, 1972).

DIVISION OF PSYCHIATRIC SOCIAL WORK

Assistant Professor: Joanne Turnbull, Ph.D. (Michigan, 1985), *Head of Division*.

Assistant Professors: Lisa Gwyther, M.S.W. (Case Western Reserve, 1969); Constance C. Saltz, Ph.D. (Michigan, 1982).

Associates: Maxine R. Flowers, M.S.W. (Columbia, 1964); Yoshie Gordon, M.S.W. (Simmons, 1978); Stephen Hawthorne, M.S.W. (California, 1974); Jane Clark Moorman, M.S.W. (Tulane, 1971).

Clinical Associates: Bess Autry, M.S.W. (North Carolina at Chapel Hill, 1976); Mary A. Black, M.S.W. (North Carolina at Chapel Hill, 1970); Mary Jane Burns, M.S.W. (North Carolina at Chapel Hill, 1974); Barbara Denny, M.S.W. (North Carolina at Chapel Hill, 1975); Muki Fairchild, M.S.W. (North Carolina at Chapel Hill, 1976); William Fraker, M.S.W. (Pennsylvania, 1979); Mary Gail Holton, M.S.W. (Richmond Professional Institute, 1966); Gail M. McIlwain, A.C.S.W. (North Carolina at Chapel Hill, 1971); Irene Moore, M.S.W. (Tennessee, 1982); Betty B. Parham, M.S.W. (Smith, 1971); Anne K. Parrish, M.S.W. (North Carolina at Chapel Hill, 1963); Joye Pursell, M.S.W. (North Carolina at Chapel Hill, 1978); Elinor Roy, M.S.W. (North Carolina at Chapel Hill, 1977); Carolyn Thornton, M.S.W. (North Carolina at Chapel Hill, 1968); Margaret Wilner, M.S.W. (Columbia, 1977).

Instructors: Camille S. Arrington, M.S.W. (North Carolina at Chapel Hill, 1982); Christine Bell, M.S.W. (North Carolina at Chapel Hill, 1977); Edna Bullard, M.S.W. (North Carolina at Chapel Hill, 1980); Linda L. Campbell, A.C.S.W. (North Carolina at Chapel Hill, 1981); Christine Erskine, M.S.W. (North Carolina at Chapel Hill, 1980); Lisa Gilland, M.S.W. (North Carolina at Chapel Hill, 1978); Nyra Hill, M.S.W. (North Carolina at Chapel Hill, 1978); Robert Laws, M.S.W. (North Carolina at Chapel Hill, 1978); Mary Pat Lennon, M.S.W. (Catholic Univ., 1978); Edward Lueth, M.S.W. (North Carolina at Chapel Hill, 1982); William S. Meyer, M.S.W. (Illinois, 1977); Lois Perlman Minis, M.S.W. (North Carolina at Chapel Hill, 1981); Ylana N. Miller, Ph.D. (California at Berkeley, 1975); Mickey Tullar, M.S.W. (North Carolina at Chapel Hill, 1982); Marilyn Valenzuela, M.S.W. (Hunter, 1967); Karen Weiner, M.S.W. (North Carolina at Chapel Hill, 1985); Terri Woodford, M.S.W. (Virginia, 1983).

Required Courses

PSC-200. Consists of sixty hours devoted to human behavioral sciences basic to medicine: behavioral neurobiology, individual psychology, and the social sciences. The class is divided into small groups of ten to twelve students, each group led by two senior faculty members, with contrasting knowledge, and a psychiatric resident. Group activity consists of discussion of assigned readings in all of the areas listed above as well as interviews of psychiatric and non-psychiatric patients intended to demonstrate behavioral science principles as well as provide opportunity for development of interviewing skills.

PSC-205. Required during the second year—is an eight-week clerkship in clinical psychiatry. The student assumes limited responsibility, under supervision, for diagnosis and treatment of patients on the psychiatric wards, psychiatric outpatient clinic, and psychosomatic consultation services on nonpsychiatric wards of the hospital. Supervision is directed toward the application of concepts of diagnosis, psychopathological formulation, and therapy. These concepts are taken from descriptive, biological, psychoanalytic, and psychosocial contributions to current psychiatric thought. Supervision is also provided to develop interpersonal techniques of sensitive observation and therapeutic use of self. Emphasis is placed upon concepts and techniques applicable to all patients as well as psychiatric patients. To this end student interviews with patients on the nonpsychiatric services are reviewed with a psychiatric supervisor. Didactic instruction includes seminars on symptomatic, characterological, and psychophysiological neurotic conditions; the major psychoses; psychiatric problems of childhood; adolescence and late life; drug and somatic therapies; the psychotherapies; and introductory electroencephalography. In addition to rounds and case conferences, students are encouraged to observe psychotherapy and to participate in supervised psychological treatment whenever appropriate situations can be provided.

Electives

PSC-210(B).† Philosophy of Science and Behavioral Sciences. A reading-discussion seminar reviewing the traditional (logical empiricist) view of scientific knowledge and method followed by consideration of recent developments of thought suggesting additions and modifications to that view. Implications for the behavioral sciences in medicine are emphasized. Weight: 1. *Hine*

PSC-213(B).† Human Development I: Birth to Adolescence. This course is a survey of the psychological development of the child from birth through adolescence. The first segment of the course is designed to provide the student with an awareness of some of the major theoretical orientations to child development including the psychoanalytic, Piagetian, and social learning positions. This is followed by a systematic study of the normal sequences of child development, focusing in particular on some of the major events in the cognitive, social, and emotional life of the child. The course is run in seminar fashion utilizing numerous theoretical and research papers as well as observation of children in naturalistic settings to facilitate class discussion. Students will also be required to familiarize themselves with research in child development by doing a review of the literature in a defined area. Weight: 2. *Curry*

PSC-214(B).† Human Development II: The Later Years of Life. This course

†For further information, contact the Associate Dean for Graduate Medical Education.

will cover the basic research material in the psychology of adult development and aging with an emphasis on such topics as personality development, intellectual development, learning and memory, family and social processes, health and behavior, and research methods. Additionally, the use of research and knowledge base in geriatric medicine and in geriatric psychiatry, with a focus on understanding normal development in mid-life and old age, will be discussed. The course will be taught as a seminar. There will be assigned readings on reserve at the library and a recommended text. Students will be required to review the literature in an area of their choice, prepare an annotated bibliography, and have an oral examination on the topic. Weight: 2. *Siegler*

PSC-215(B).† Comparative Personality Theory. An examination of models of human functioning; topics will include examples from psychoanalytic, interpersonal, humanistic, behavioristic, and existential approaches with the goal of recognizing personality issues that may arise within the framework of the doctor-patient relationship. A paper covering empirical approaches is required. Term: Spring 1. Weight: 1. *Crovitz*

PSC-217(B).† Interpersonal Relationships. Theoretical and empirical models of interpersonal relationships will be examined, with emphasis upon the changing, developmental stages of interpersonal relationships. Research in marital and family systems and in physician-patient dyads will be critically discussed. Weight: 1. *Lochman*

PSC-223(B).† Neurobiological Basis of Behavior. The course surveys neuro-anatomical, neurophysiological, neurochemical, and neuropharmacological evidence of central nervous system function as it relates to normal and abnormal behavior. Clinical description, measurement of function, as well as the biological substrates of affective disorders and psychoses, will be emphasized. Scientific bases of current therapeutic procedures, especially psychopharmacological, will be examined. Course format consists of assigned readings, study questions, lectures by faculty, and other active researchers. Mid-term and final examinations are given. Additionally, students will have an opportunity to become acquainted with and to participate in ongoing research. Weight: 4. *Ellinwood, Bisette, Cant, Carroll, Coffey, Davidson, Erwin, Hong, Kilts, Krishnan, Kuhn, Lin, Logue, Marsh, Nemeroff, Nishita, Slotkin, Weiss, and Williams*

PSC-238(B).*† Psychophysiology. The first half of the course is devoted to lecture presentations covering the major topics in psychophysiology. The topics receiving a major emphasis are cognition, attention, emotional states, EEG, evoked potentials, skin potential, heart rate, and muscle tension. The second half of the course is devoted to seminar style presentations by the students on topics of their choice and to demonstrations and experiments carried out in the laboratory. A midterm and final exam along with a term paper determine the grade. Weight: 3. *Marsh*

PSC-293(B).† Behavioral Medicine. The theory and application of behavior therapy and behavior modification as applied to the treatment of disease will be discussed. The course will focus on the direct behavioral manipulation of pathophysiology, using biofeedback, relaxation and other self-control techniques. Attention will be focused on the treatment of headaches, cardiovascular disorders, neuromuscular disorders, chronic pain, and stress-related gastrointestinal disease. Both didactic presentation and case material will be used. Students will be expected to spend at least two hours per week seeing patients and rounding with staff. Weight: 2. *Surwit, Blumenthal, and Keefe*

PSC-297(B). Ethnic and Minority Health Patterns and Problems. Descriptive and analytical focus on the literature about ethnic and minority health patterns in the United States, the issues inherent therein, and the implications thereof for the delivery of medical services. Weight 4. *Jackson*

PSC-299(B).† Preceptorship in Neurobiology and/or Behavioral Science. Opportunity for the student to work closely with a member of the faculty in an area of mutual interest, with emphasis upon research. (See biobehavioral study program for partial list of interest areas; more complete descriptions available.) Weight: 1-8. *Ellinwood and staff*

PSC-303(B).† Developmental Disabilities. The course will focus on several disorders illustrative of the field, such as retardation, autism and learning disabilities as well as broader issues relating to evolving approaches at diagnosis, remediation, and prevention. The objectives are to present what is known about the etiology and course of developmental disabilities as well as an appreciation of management issues. Weight: 2. *Thompson*

PSC-305(B).† Social and Cultural Aspects of Illness. Seminar on medical-social roles in community and hospital. Topics include physician-patient relationship; epidemiology of illness and health services in terms of ecology, social stratification, race, deviance, and life cycle. Proposals for improving health services are examined. Students prepare and present to the seminar a term paper on a topic of their choice. Students wishing further work in one particular topic such as black sub-culture or gerontology, should take PSC-299(B) specifying particular interest. May be taken in conjunction with PSC-251(C). Weight: 3. *Palmore and Maddox*

PSC-227(C). Behavioral Aspects of Pediatrics. This course will offer trainees the opportunity to work as a part of an interdisciplinary team in diagnosis and treatment children and adolescents (ages two to twenty-one) with a variety of psychiatric problems. This may include anorexia nervosa, bulimia, enuresis, encopresis, school phobia, psychosomatic disorders, tourette syndrome, suicidal and acting-out adolescents, chronically or terminally ill children and child abuse and neglect cases. Trainees will learn principles of child and adolescent development, psychoanalytic and family systems theory. The trainee will participate in child, parent, and family interviews and treatment and will function as an integral part of the treatment team to experientially learn about the diagnosis and treatment of child and adolescent disorders. There will be an opportunity to be involved in the inpatient and outpatient treatment process on pediatric and adolescent psychiatric wards. (See also PED-227(C).) Weight: 2-6. *Jones, Lee, Yancy, and Mrs. Anderson*

PSC-234(C). Clinical Psychopharmacology. Experience in one or more areas of psychopharmacology including clinical use of drugs, human experimental psychopharmacology, evaluation of drugs based on FDA guidelines, biometric approach to ratings of psychopathology, statistical models, use of computers in psychometric testing. Weight: 4. *Zung and Ellinwood*

PSC-240(C). Inpatient Psychiatry. This course is an intensive clinical experience in the diagnosis and treatment of severe and incapacitating psychiatric disorders. The student will be given more clinical responsibility than the comparable second year inpatient rotation. Patient care responsibilities will include management of ward milieu. Treatment approaches emphasizing psychotropic medication, individual, family and group psychotherapy will be part of the clinical experience. Participation at selected patient care conferences and didactic lectures is expected. The rotation is available at Duke and the Veterans Administration Medical Center. The rotation at the Veterans Administration Medical Center will include admission decision-making. At Duke, specialty program experience is available. This experience can be structured to include a survey of the variety of residential treatment available in this area. If desired a student may arrange for a special reading tutorial in related topics (e.g. schizophrenia). Weight: 8-6-3. *Cavenar and Melges*

PSC-241(C). Clinical Management of Psychiatric Inpatients. Students will develop their skills and knowledge in caring for hospitalized psychiatric patients by performing a subinternship role with close faculty supervision. They will learn treatment of major psychiatric illness by taking primary responsibility for approximately eight patients per month. Weight: 4 or 9. *Poe*

PSC-243(C). Principles and Practice of Outpatient Psychiatry. Training and experience in recognizing and treating emotional disorders in outpatients. Supervised experience with patients having emotional problems commonly seen in medical practice. Training to include theory and techniques of brief psychotherapy, crisis intervention, supportive psychotherapy, and utilization of community resources, both at Duke Hospital and neighboring agencies. The student will be given more clinical responsibility than the comparable second-year outpatient rotation. Because of the nature of outpatient work it is suggested that the student take the longer (8 weeks) rather than the shorter rotation. Weight: 3-8. *Hawkins, Weiss, Werman, and staff*

PSC-245(C). Psychosomatic Medicine. The consultation-liaison services at the Duke Medical Center and the VA Medical Center offer clinical clerkships in the psychological management of medical patients. At Duke Hospital, the student does consultations to the various medical and surgical services under the supervision of residents and staff. Emphasis is placed on training the student in interviewing, assessing, and intervening with patients who are depressed, hypochondriacal, responding emotionally to illness, or have conversion symptoms. At the VA Medical Center opportunities are available to work with selected staff people on the emotional aspects of the disease process through surgical and medical liaison consultations. Students can select specific areas of interest which include emotional aspects of cardiac disease, intensive care, death and dying, orthopaedics, and pain. Weight: 8. *Breslin, Volow, Maltbie, France, and Williams*

PSC-251(C). Community Psychiatry. The student will develop a course based on selections from a variety of community and special population settings; this includes the Durham Mental Health Center and its component units (children's services, alcohol and drug abuse and dependency treatment programs, programs for the care and training of the mentally retarded and adult psychiatry services); the Federal Corrections Center at Butner, and the psychiatric service at the Lincoln Community Health Center. Students interested in this elective must contact Dr. Llewellyn, Dr. Surwit or Dr. James Carter at least four weeks prior to the term selected for this course in order to develop a program tailored to the student's interests. Weight: 4-8. *Llewellyn, Surwit, Carter, and staff of Division of Social and Community Psychiatry*

PSC-253(C). Group Psychotherapy. Observation of an on-going outpatient group psychotherapy program. Weight: 1. *Hawkins and staff*

PSC-255(C). Marriage Counseling in Medical Practice. Basic concepts of the marital relationship and the fundamentals of recognizing, evaluating, and counseling patients with marital problems will be taught. The orientation will be for the physician delivering primary care. References to the literature will be discussed, and a bibliography will be supplied; community resources for marriage counseling will be described; and students will be expected to present case material for discussion during class sessions. Weight: 1. *Llewellyn and Breslin*

PSC-260(C). Psychiatric Aspects of Organic Brain Disease. This two to four credit elective presents the clinical and behavioral aspects of organic brain conditions at the interface between psychiatry and neurology: epilepsy, narcolepsy, sleep apnea, varied dementias, movement disorders, and organic personality syndromes such as frontal lobe syndrome. In the two to three credit curriculum,

the student will learn a multidisciplinary clinical approach integrating psychiatric and neurologic observations with bedside neuropsychological observations, and will become more aware of the role of more formal neuropsychological testing. Clinical material will be drawn from the VAMC psychosomatic service's consultation activities with the VAMC psychiatry, neurology and neurosurgical services. A fourth credit is available for training in the use of electroencephalograms. Weight: 3 or 4. *Volow and Logue*

PSC-261(C). Clinical Psychology. The goal of this course is to help the student determine the relevance of psychological factors in the etiology and management of common medical problems. The course will introduce the student to psychological assessment techniques. Students will gain familiarity with the potential utility of these tests in medical practice by both observation and practice in their administration and interpretation. Students who are interested in medical problems such as cognitive impairment, low back pain, headache, or cardiac disease may elect to concentrate their efforts in a specific area. Weight: 1. *staff*

PSC-263(C). Treatment of Anorexia Nervosa and Bulimia. The purpose of this course is to train students in recognizing and treating anorexia nervosa and bulimia. The experience is offered in a multimodel treatment setting and includes: participation in inpatient team meetings, individual psychotherapy sessions with inpatients, observation of family sessions, and participation in outpatient support groups. Weight: 4-8. *Rockwell and Ellinwood*

PSC-265(C). Inpatient Adolescent and Family Psychiatry. Adolescent and family psychopathology are emphasized in the full-time clinical rotation. The experience offered is an intensive and rich one with opportunities to observe and treat patients and their families. Group and individual supervision, collaboration with milieu team members and diagnostic and treatment conferences are heavily emphasized. Weight: 8. *Guajardo*

PSC-266(C). Clinical Management of Adolescent Inpatients. This course consists of well supervised, clinical care for adolescents with various psychopathologic disorders. Each student will be an integral member of the clinical team, with opportunities for participating in individual and group psychotherapy as well as family therapy and parent counseling. A senior staff psychiatrist will be assigned as a preceptor. Weight: 4-8. *Anderson and Curry*

PSC-267(C). Clinical Child Psychiatry Outpatients Programs. Under supervision, the student will perform diagnostic evaluations and short-term treatment with parents, children and families, and may participate in one or more of the following specialty programs: (a) therapeutic kindergarten and elementary school; (b) juvenile court clinic; (c) conduct disorder clinic. Child development and the psychobiological and psychodynamic perspectives of childhood psychopathology will be emphasized. Weight: 3-6. *Harris, Keith, Lochman, and Flowers*

PSC-268(C). Psychosocial Aspects of Medical Illness. Seminars and supervised clinical experiences on the medical wards and clinics will be used to provide the student with knowledge of basic principles and practical clinical skills relevant to determining the role of psychosocial factors in the etiology and course of physical disease in man. This course must be taken in conjunction with a clinical rotation that includes ongoing responsibilities for patient care. Also listed as MED-268(C). Weight: 2. *Williams*

PSC-271(C). Fiction and the Doctor's Life. The seminar will hope to examine the various opportunities, hazards, impasses—the victories and defeats—which are likely to confront doctors in the course of their lives through a series of novels and short stories whose subject-matter deals with, directly or indirectly, the practice of medicine: William Carlos Williams' "Doctor Stories," Walker Percy's novels,

Flannery O'Connor's stories as well as those of Chekhov and Tolstoy. The emphasis is on the humanities as a means of reflection—the storyteller's insistence upon the concrete, the ambiguous, the ironic and the paradoxical elements in this life, and in the physician's work. Weight: 2. *Coles*

PSC-273(C). The Ideal Physician. The elective will explore, from the perspectives of history and ethics, the concept of the ideal physician in relation to such figures as Hippocrates, Osler, and others as well as students' and patients' conceptions of what a physician should be, technician and/or humanist. Weight: 1-2. *Dyer and medical history staff*

PSC-274(C). The Ideal Patient. This elective will focus, using the disciplines of history and ethics, on the physician's relationship with the patient and how to deal with patients' expectations of what medicine has to offer. Topics highlighted will include the growth of medical technology, concepts of disease, psychosomatic medicine, and the medicalization of life. Weight: 1-2. *Dyer and medical history staff*

PSC-333 (C). Family Psychiatry and the Therapeutic Community: Durham County General Hospital. Students will evaluate and treat patients within a family-oriented therapeutic community. The principles and practice of psychiatric diagnosis and treatment in a community setting will be stressed. Advanced students will participate in family therapy, group therapy, and the total management of the patient. Weight: 8. *Thompson and Winton*

PSC-335(C). Research Preceptorship in Clinical Psychiatry. This course allows the student to work on a research project in clinical psychiatry with selected members of the psychiatric staff. Weight: 3-8. *Gianturco. Clinical staff by arrangement*

PSC-336(C). Biology of Depression. This elective will focus on the diagnostic, nosologic, treatment and research aspects of depression in adult and late life. The student will be delegated clinical responsibility, and he/she will be closely involved with the treatment team of the affective disorders specialty clinic. Participation at team meetings and diagnostic conferences is expected. Weight: 4-8. *Carroll, Nemeroff, Krishnan, and Blazer*

PSC-337(C). Geriatric Psychiatry. The medical and clinical aspects of geriatric psychiatry with emphasis on diagnosis and management of geriatric patients in a variety of treatment facilities. Course includes attendance at scheduled conferences and supervised review of geriatric literature. Course may be taken in conjunction with PSC-214(B). Weight: 3-8. *Verwoerd, Whanger, Blazer, Wang, and staff*

PSC-343(C). Clinical Aspects of Alcohol and Drug Abuse. This course offers a part-time or full-time experience on the Durham VA Medical Center inpatient service in the diagnosis, treatment, and discharge planning for patients who abuse alcohol and/or drugs. The interrelations of substance abuse with personality disorder and major psychiatric disorder is emphasized. Weight: 4-8. *Cavenar and clinical staff*

PSC-353(C). Correctional-Forensic Psychiatry — Adult and Adolescent. Part-time or full-time experience in a correctional setting is offered. Diagnosis and treatment of adult and adolescent offenders with a variety of medical illnesses and behavioral disturbances are recognized. Elements of forensic psychiatry are stressed where appropriate. Supervision is provided by Duke and University of North Carolina faculty and the Central Prison Hospital and mental health staff. Opportunities for participation in a wide range of original and continuing research are available. Weight: 2-9. *Carter (Duke), Smith (Central Prison), and Rollins (Dorothea Dix)*

PSC-355(C). Clinical Experience in Psychotherapy. This course provides supervised instruction in the long-term care of patients with emotional illness. The

student will undertake the psychotherapy of a patient under the direction of a member of the psychiatric faculty. The arrangement with the psychiatric supervisor should be discussed and confirmed with the fourth year clinical departmental professional adviser in psychiatry. Weight: 1-3. *Gianturco and staff*

PSC-357(C). Behavioral Medicine: Behavioral Treatment of Disease. This course is designed to acquaint the student with behavioral treatment approaches which have proved useful in management of many medical problems. Students will be involved in evaluation and treatment of patients with physical and psychiatric disorders. Students will be taught how to conduct a behavioral assessment of medical problems and will be familiarized with various treatment strategies, including relaxation techniques, biofeedback techniques, and operant conditioning and contingency management procedures. Weight: 1. *Surwit, Keefe, and Blumenthal*

PSC-400(C). Geriatric Medicine. This elective is offered by the interdepartmental faculty of the Division of Geriatric Medicine. The student will work with faculty, fellows, and house staff in a number of settings involved in the care of the geriatric patient. These will include the Geriatric Evaluation and Treatment Clinic (Duke), Geriatric Evaluation Unit and Clinic (Veterans Administration Medical Center), geriatric consultation services (Veterans Administration Medical Center, Durham County General Hospital, and Duke), nursing home facilities, interactions with community services (Coordinating Council for Senior Citizens), home assessment, and others. Principles to be stressed will be biology and pathophysiology of aging; multiple clinical problems in the elderly; interdisciplinary team approach to evaluation, planning, and treatment; goals of maximal functional achievement and independence for the elderly. The student will participate actively in the workup and management of patients in both inpatient and outpatient settings as well as become more familiar with the problems of the elderly in the community. Familiarity with the growing literature in geriatric medicine will be encouraged and the student will participate in seminars, lectures, and team meetings at the appropriate sites including the Duke Center for the Study of Aging. Weight: 4 or 8. *Cohen, DeMaria, Lyles, Moore, Simpson, Sullivan, and Sweeny*

Radiology

Professor: Carl E. Ravin, M.D. (Cornell, 1968), *Chairman*.

DIVISION OF IMAGING

Professor: Carl E. Ravin, M.D. (Cornell, 1968), *Director*.

Professors: James T.T. Chen, M.D. (Nat'l. Defense Med. Ctr., Taiwan, 1950); R. Edward Coleman, M.D. (Washington Univ., 1968); Burton P. Drayer, M.D. (Illinois, 1971); N. Reed Dunnick, M.D. (Cornell, 1969); Eric L. Effmann, M.D. (Indiana, 1967); Herman Grossman, M.D. (Columbia, 1953); E. Ralph Heinz, M.D. (Pennsylvania, 1955); Donald R. Kirks, M.D. (Missouri, 1968); Reed P. Rice, M.D. (Indiana, 1955); Leonard D. Spicer, M.D. (Yale, 1968); William M. Thompson, M.D. (Pennsylvania, 1969).

Associate Professors: James D. Bowie, M.D. (Oklahoma, 1967); William H. Briner, B.S. (Temple, 1954); Barbara Carroll, M.D. (Stanford, 1972); C. Craig Harris, M.S. (Tennessee, 1951); Ronald Jaszczak, Ph.D. (Florida, 1968); G. Allen Johnson, Ph.D. (Duke, 1974); Salutarior Martinez, M.D. (Havana Univ., 1961); David F. Merten, M.D. (Cincinnati, 1948); Robert H. Wilkinson, Jr., M.D. (Washington Univ. 1958); Joseph P. Workman, M.D. (Maryland, 1946); Michael R. Zalutsky, Ph.D. (Washington Univ., 1974).

Assistant Professors: Mark E. Baker, M.D. (Loyola, 1978); Russell A. Blinder, M.D. (Pennsylvania, 1979); Simon D. Braun, M.D. (Emory, 1977); Caroline Chiles, M.D. (Duke, 1977); Richard H. Cohen, M.D. (New York Univ., 1979); Cirrelda Cooper, M.D. (Northwestern, 1980); William T. Djang, M.D. (Johns Hopkins, 1977); William Foster, Jr., M.D. (Duke, 1973); David Godwin, M.D. (Stanford, 1971); Robert A. Halvorsen, Jr., M.D. (Miami, 1974); Laurence Hedlund, Ph.D. (Pittsburgh, 1968); Robert J. Herfkens, M.D. (Loyola, 1974); Fernando F. Illescas, M.D. (McGill, 1979); Barry S. Mahony, M.D. (Colorado, 1979); Glenn E. Newman, M.D. (Duke, 1973); Louis M. Perlmutter, M.D. (North Carolina at Chapel Hill, 1977); Stephen J. Riederer, Ph.D. (Wisconsin, 1979); LeRoy Roberts, M.D. (Temple, 1975); Paul Silverman, M.D. (Massachusetts, 1977); Stephen J. Strom, Ph.D. (Kansas, 1978); Daniel C. Sullivan, M.D. (Vermont, 1970); Margaret E. Williford, M.D. (Duke, 1976).

Associates: Erol M. Beytas, M.D. (Vanderbilt, 1981); Jerrold Gale, M.D. (Chicago, 1981); Charles Daniel Johnson, M.D. (Rochester, 1979); Jordan B. Renner, M.D. (Virginia, 1980); Mohsin Saeed, M.D. (Connecticut, 1979); Steven K. Sussman, M.D. (Albert Einstein, 1980); Janet Szabo, M.D. (North Carolina at Chapel Hill, 1979); Joseph A. Utz, M.D. (New Jersey, 1975); Diana R. Voorhees, M.D. (Pennsylvania, 1981); William W. Woodruff, M.D. (Virginia, 1981).

Research Associates: Mark A. Brown, Ph.D. (Duke, 1982); Carey E. Floyd, Ph.D. (Duke, 1981); Stephen H. Manglos, Ph.D. (Duke, 1981).

DIVISION OF RADIATION BIOLOGY

Associate Professors: William D. Currie, Ph.D. (North Carolina at Chapel Hill, 1964); Randy L. Jirtle, Ph.D. (Wisconsin, 1975).

Assistant Professor: Raymond U, Ph.D. (Kyoto, Japan, 1970).

DIVISION OF RADIATION PHYSICS

Professor: Fearghus O'Foghluha, Ph.D. (Natl. Univ. of Ireland, 1961), *Director*.

Assistant Professors: Mark J. Engler Ph.D. (Mass. Inst. of Tech., 1969); Daniel Miller, Ph.D. (North Carolina State, 1971); Charles E. Nelson, Ph.D. (Ohio, 1973).

Research Associate: James W. Blackburn.

Associate: Conrad Knight.

DIVISION OF RADIATION THERAPY

Professor: Leonard Prosnitz, M.D. (State Univ. of New York, 1961), *Director*.

Professor: Gustavo S. Montana, M.D. (Bogota, Columbia, 1960).

Associate Professors: James R. Oleson, M.D., Ph.D. (Arizona, 1976); Boyd T. Worde, M.D. (Tennessee, 1947).

Assistant Professors: Ian Crocker, M.D. (Saskatchewan, 1976); Mark W. Dewhirst, D.V.M., Ph.D. (Colorado, 1979); Dale L. Duncan, M.D. (South Carolina, 1979); Edward E. Halperin, M.D. (Yale, 1979).

Emeriti: George J. Baylin, M.D.; Alice L. McCrae, M.D.

Required Course

RAD-200. The basic course in radiology for all medical students is combined with physical diagnosis and laboratory diagnosis into IND-200. The course is a concentrated lecture series with correlating demonstration laboratories designed to provide a broad introductory exposure to the entire field of diagnostic radiology.

Electives

RAD-221(B). General Physics of Radiology. Basic physics underlying radiation diagnosis and therapy, emphasizing production and measurement of ionizing radiation and radiation interactions in tissue; physical rationale of radiation methods in clinical practice; survey of recent developments in radiological equipment; radiation hazards. Weight: 2. *O'Foghluha*

RAD-223(B). Radioisotope Methods and Techniques in Biomedical Research. Introduction to principles and practices in biomedical research applications of radioactive materials: fundamentals of radioactivity, nuclear instrumentation, counting methodology, statistics of counting, liquid scintillation counting, external standard ratio, sample preparation. This course will be helpful for those seeking state or federal licenses for biomedical research uses of radioactive materials. Weight: 2. *O'Foghluha, Currie, and Knight*

RAD-227(B). General Radiobiology. Basic fundamentals essential to an understanding of biological effects of ionizing radiation at the molecular, cellular and organismal level. The course will cover the following topics: radiation physics, radiation chemistry, DNA repair, genetic effects, radiation carcinogenesis, radiation effects on the developing embryo and fetus, general radiation syndromes, oxygen effect, radiation protectors and sensitizers, tumor physiology and hyperthermia. Weight: 2. *Jirtle*

RAD-231(B). Introduction to Radiological Sciences. Basic principles underlying radiography, contrast materials, ultrasound, nuclear medicine, computerized

tomography, and nuclear magnetic resonance will be presented. A thorough review of radiographic anatomy will precede an organ-system approach to radiologic-pathologic correlation. Lectures will be supplemented with demonstrations. Weight: 3. *Effmann, Thompson, and Putman*

RAD-250(B). Research in Radiology. An individually arranged experience in which the student identifies with and participates in an established research program of a faculty member. Program should be arranged with DPA and proposed faculty member well in advance of starting date. Weight: 1-8. *Effmann, Thompson, and Putman*

RAD-210(C). Pediatric Radiology. A specialized program of instruction and participation in the wide variety of radiographic examinations in the pediatric age group. Special correlation of these examinations to the problems of specific diagnosis and patient care will be made. Students must contact Dr. Kirks prior to registration. Weight: 4-8. *Kirks and staff*

RAD-211(C). Clerkship in Neuroradiology. A specialized program of detailed instruction in neuroradiology. The program includes participation in the performance and interpretation of a variety of examinations including cerebral angiography, pneumoencephalography, computerized axial tomography, nuclear magnetic resonance, myelography, cisternography, and others. Students must contact Dr. Djang prior to registration. Weight: 4. *Djang and staff*

RAD-215(C). Clinical Radiation Oncology. Half of all cancer patients require radiation therapy of curative or palliative intent at some point in their care. This course provides clinical experience in evaluation, treatment, and follow-up of patients treated in the Division of Radiation Oncology. The course is particularly directed to students with career goals in medical, radiation, or surgical oncology. Students must contact Dr. Prosnitz prior to registration. Weight: 4-8. *Prosnitz and staff*

RAD-229(C). Basic Radiology Clerkship. This is designed to provide a broad exposure to varied aspects of diagnostic radiology. The elective consists of: (a) an informal lecture course, supplemented by student presentations; (b) weekly rotations observing the performance and discussing the interpretation of radiographic procedures; (c) use of an extensive teaching file of radiographs; (d) viewing a series of audiovisual tapes. One week is spent on the chest rotation, the other rotations are at the individual students' discretion, and may include GI, GU, bone, neuro, pediatrics, vascular, nuclear medicine, body computed tomography or ultrasonography. Rotations to the VAMC radiology department may also be arranged. All registrants will meet with Dr. Chen the morning of the first day of the course to discuss their individual rotations. Weight: 4-8. *Chen, Cooper and staff*

Surgery

James B. Duke Professor: David C. Sabiston, Jr., M.D. (Johns Hopkins, 1947), *Chairman*.

DIVISIONS OF GENERAL AND CARDIO-THORACIC SURGERY

Professors: James B. Duke Professor D. Bernard Amos, M.D. (Guys Hospital, London, 1963), Experimental Surgery; William G. Anlyan, M.D. (Yale, 1949); James B. Duke Professor Dani P. Bolognesi, Ph.D. (Duke, 1964), Experimental Surgery; Eugene D. Day, Ph.D. (Delaware, 1952), Experimental Surgery; Howard C. Filston, M.D. (Western Reserve, 1962); Robert H. Jones, M.D. (Johns Hopkins, 1965); Joseph A. Moylan, Jr., M.D. (Boston, 1964); H. Newland Oldham, Jr., M.D. (Baylor, 1961); William P. J. Peete, M.D. (Harvard, 1947); Hilliard F. Seigler, M.D. (North Carolina at Chapel Hill, 1960); Edwin L. Jones and Lucille Finch Jones Cancer Research Professor of Surgery William W. Shingleton, M.D. (Bowman Gray, 1943); Delford L. Stickel, M.D. (Duke, 1953); Andrew S. Wechsler, M.D. (State Univ. of New York, 1964); Walter G. Wolfe, M.D. (Temple, 1963); W. Glenn Young, Jr., M.D. (Duke, 1948).

Clinical Professors: Steward M. Scott, M.D. (Baylor, 1951); Gulshan K. Sethi, M.D. (All India, 1963); George M. Smith, M.D. (Univ. of St. Andrews, 1957); Timothy Takaro, M.D. (New York Univ., 1943).

Associate Professors: Onyekwere Akwari, M.D. (Southern California, 1970); Darell D. Bigner, M.D. (Duke, 1965), Ph.D. (Duke, 1971), Experimental Surgery; Ralph R. Bollinger, M.D. (Tulane, 1970), Ph.D. (Duke, 1977); Gregory S. Georgiade, M.D. (Duke, 1973); John P. Grant, M.D. (Chicago, 1969); George S. Leight, Jr., M.D. (Duke, 1972); James E. Lowe, M.D. (California at Los Angeles, 1973); Philip D. Lumb, M.B.B.S. (London University School of Medicine, 1974); J. Scott Rankin, M.D. (Tennessee, 1969); Alfred Sanfilippo, M.D. (Duke, 1975); Ph.D. (Duke, 1976), Experimental Surgery; Wirt W. Smith, M.D. (Texas, 1951), Experimental Surgery; John L. Weinerth, M.D. (Harvard, 1967).

Associate Medical Research Professors: Per-Otto F. Hagen, F.H.W.C. (Watt University, Edinburgh, Scotland, 1961), Experimental Surgery; Alphonse J. Langlois, Ph.D. (Duke, 1966), Experimental Surgery.

Associate Clinical Professor: James E. Davis, M.D. (Pennsylvania, 1943).

Adjunct Associate Professor: Jeffrey J. Collins, Ph.D. (Harvard, 1972), Experimental Surgery.

Assistant Professors: Miles W. Cloyd, Ph.D. (Duke, 1976), Experimental Surgery; Norbertus P. DeBruijn, M.D., M.Sc. (Univ. of Gronigen, 1976); Michael S. Gorbach, M.D. (Maryland, 1979); J. Dirk Iglehart, M.D. (Harvard, 1975); Mohammad Maroof, M.D. (Liaquat Med. Coll., Pakistan, 1964); Richard L. McCann, M.D. (Cornell, 1974); William C. Meyers, M.D. (Columbia, 1975); Lawrence H. Muhlbaier, Ph.D. (North Carolina at Chapel Hill, 1981); Glenn E. Newman, M.D. (Duke, 1973); Peter Van Tright III, M.D. (Tulane, 1977); Frances F. Ward, Ph.D. (Brown, 1965), Experimental Surgery.

Assistant Medical Research Professors: Anwar S. Abd-Elfattah, Ph.D. (Mississippi, 1979); Bruce Lobaugh, Ph.D. (Pennsylvania, 1981); Thomas J. Matthews, Ph.D. (Missouri, 1971), Experimental Surgery; Elmer J. Rauckman, Ph.D. (Duke, 1975); Gary Stuhlmiller, Ph.D. (Duke, 1976), Experimental Surgery; Kent J. Weinhold, Ph.D. (Pennsylvania, 1979), Experimental Surgery.

Assistant Clinical Professors: Toney W. Baskin, M.D. (Louisiana, 1969); Albert H. Bridgman, M.D. (Louisiana, 1956); Rollins S. Burhans, Jr., M.D. (Louisville, 1963); Gordon M. Carver, M.D. (Duke, 1948); Richard L. Dales, M.D. (South Carolina, 1976); John T. Daniels, M.D. (Howard, 1964); Thomas L. English, M.D. (Duke, 1969); Thomas J. Enright, M.D. (Buffalo, 1948); Richard A. Hall, M.D. (Tulane, 1971); Walter J. Loehr, M.D. (Cornell, 1963); F. Maxton Mauney, Jr., M.D. (Duke, 1959); W. B. McCutcheon, Jr., M.D. (Virginia, 1952); Amir A. Neshat, M.D. (Isfahan University, Iran, 1960); Charles D. Watts, M.D. (Howard, 1943); David K. Wellman, M.D. (Duke, 1971); James S. Wilson, Jr., M.D. (North Carolina at Chapel Hill, 1975).

Medical Research Associate: Paul Hendrix, B.S. (Coll. of Charleston, 1970), B.H.S. (Duke, 1975).

Research Associates: Susan M. Blanchard, Ph.D. (Duke, 1982); Timothy Darrow, Ph.D. (State Univ. of New York, 1980); James W. Davis, M.S.E.E. (Duke, 1974); Gudrun Huper, M.A. (Stuttgart, Germany).

DIVISION OF NEUROSURGERY

Professor: Robert H. Wilkins, M.D. (Pittsburgh, 1959), *Chief*.

Professor: Blaine S. Nashold, M.D. (Louisville, 1949).

Associate Professor: Wesley A. Cook, Jr., M.D. (Oregon, 1963).

Assistant Professors: Dennis E. Bullard, M.D. (St. Louis, 1975); Allan H. Friedman, M.D. (Illinois, 1974); Richard S. Kramer, M.D. (Duke, 1962); W. Jerry Oakes, M.D. (Duke, 1972); Bruno J. Urban, M.D. (Germany, 1960).

Assistant Clinical Professors: Bruce L. Kihlstrom, M.D. (North Carolina at Chapel Hill, 1972); Walter S. Lockhart, M.D. (Bowman Gray, 1944); Robert E. Price, Jr., M.D. (North Carolina at Chapel Hill, 1964).

Research Associates: Janice O. Levitt, Ph.D. (Temple, 1963); Robert D. Pearlstein, M.S. (North Carolina at Chapel Hill, 1978).

DIVISION OF ORAL SURGERY

Associate Professor: John C. Angelillo, D.D.S., M.D. (Duke, 1970) *Chief*.

Assistant Professor: Edward A. Dolan, D.D.S. (Maryland, 1971).

DIVISION OF ORTHOPAEDIC SURGERY

Professor: James R. Urbaniak, M.D. (Duke, 1962), *Chief*.

Professors: Frank H. Bassett III, M.D. (Louisville, 1957); Frank W. Clippinger, M.D. (Washington, 1952); James B. Duke Professor J. Leonard Goldner, M.D. (Nebraska, 1943); Donald E. McCollum, M.D. (Bowman Gray, 1953).

Associate Professor: John M. Harrelson, M.D. (Duke, 1964).

Associate Clinical Professors: Ralph W. Coonrad, M.D. (Duke, 1947); John Glasson, M.D. (Cornell, 1943); Frank H. Stelling III, M.D. (Georgia, 1938).

Assistant Professors: Don A. Coleman, M.D. (Utah, 1979); Robert D. Fitch, M.D. (Duke, 1976); William E. Garrett, M.D., Ph.D. (Duke, 1976); Richard D. Goldner, M.D. (Duke, 1974); William T. Hardaker, M.D. (Duke, 1973); Salutario Martinez, M.D. (Havana Univ., 1961); James A. Nunley II, M.D. (Tulane, 1973).

Assistant Clinical Professors: William J. Callison, M.D. (Vanderbilt, 1953); J. Lawrence Frank, M.D. (Duke, 1965); Stephen A. Grubb, M.D. (Northwestern, 1974); J. George Jonas, M.D. (Zurich,

1954); Stephen N. Lang, M.D. (Illinois, 1965); C. Robert Lincoln, M.D. (Med. Coll. of Virginia, 1960); Angus M. McBryde, Jr., M.D. (Duke, 1963); William S. Ogden, M.D. (Med. Coll. of Georgia, 1965); Edwin T. Preston, Jr. M.D. (Duke, 1960); Glydon B. Shaver, Jr., M.D. (Tennessee, 1961).

Adjunct Assistant Professor: Marcia M. Goldner, Ph.D. (Duke, 1972).

Clinical Associates: Richard F. Bruch, M.D. (Illinois, 1972); Albert T. Jennette, M.D. (North Carolina at Chapel Hill, 1959); Leslie C. Meyer, M.D. (Nebraska, 1943); Ronald A. Pruitt, M.D. (Med. Coll. of Virginia, 1959); William A. Somers, M.D. (Duke, 1972).

Research Associate: Anthony V. Seaber.

DIVISION OF OTOLARYNGOLOGY

Professor: William R. Hudson, M.D. (Bowman Gray, 1951), *Chief*.

Associate Professors: T. Boyce Cole, M.D. (North Carolina at Chapel Hill, 1962); Joseph C. Farmer, Jr., M.D. (Duke, 1962); Patrick D. Kenan, M.D. (Duke, 1959).

Associate Medical Research Professor: John H. Casseday, Ph.D. (Indiana, 1970).

Associate Clinical Professor: Carl M. Patterson, M.D. (Maryland, 1944).

Assistant Professor: Samuel R. Fisher, M.D. (Duke, 1975).

Assistant Clinical Professors: James W. Brown, Jr., M.D. (Duke, 1941); Charles E. Clark III, M.D. (Michigan, 1968); Seth G. Hobart, Jr., M.D. (Virginia, 1950); Lynn A. Hughes, M.D. (Oklahoma, 1968); Clay W. Whitaker, M.D. (Western Reserve, 1952); C. Emery Williams, M.D. (Louisiana, 1963).

Adjunct Assistant Professor: Blake S. Wilson, B.S. (Duke, 1974).

Clinical Associates: Peter G. Chikes, M.D. (North Carolina at Chapel Hill, 1972); Edward V. Hudson, M.D. (Bowman Gray, 1962); William B. Inabnet, M.D. (Louisiana, 1958); Charles H. Mann, M.D. (West Virginia, 1966); Hubert C. Patterson, M.D. (North Carolina at Chapel Hill, 1974); Thaddeus H. Pope, Jr., M.D. (North Carolina at Chapel Hill, 1957).

Research Associates: Ellen Covey, Ph.D. (Duke, 1980).

DIVISION OF PLASTIC AND MAXILLOFACIAL SURGERY

Professor: Donald Serafin, M.D. (Duke, 1964), *Chief*.

Professors: Edward Clifford, Ph.D. (Minnesota, 1954); Nicholas G. Georgiade, D.D.S., M.D. (Duke, 1949); Robert M. Mason, D.M.D. (Kentucky, 1977), M.S.O. (North Carolina at Chapel Hill, 1979), Orthodontics; Galen W. Quinn, D.D.S. (Creighton, 1952), Orthodontics.

Associate Professors: John C. Angelillo, D.D.S. (Duke, 1970); Gregory S. Georgiade, M.D. (Duke, 1973).

Associate Medical Research Professor: Bruce M. Klitzman, B.S.E. (Duke, 1974), Ph.D. (Virginia, 1979).

Associate Clinical Professors: George F. Crikelair, M.D. (Wisconsin, 1944); Verne C. Lanier, Jr., M.D. (Vanderbilt, 1966).

Assistant Professors: William J. Barwick, M.D. (Tennessee, 1971); James A. Hoke, D.D.S. (Ohio State, 1972), M.S. (Michigan, 1976), Dentistry; W. Christopher Pederson, M.D. (Texas Southwestern, 1978); Ronald Riefkohl, M.D. (Tulane, 1972).

Clinical Associates: Ray A. Ashcraft, B.S. (North Texas State, 1958), D.D.S. (Baylor, 1963), Dentistry; Lawrence E. Scheitler, D.D.S. (Maryland, 1975), Dentistry; James T. White, D.D.S. (Loyola, 1966), M.S. (North Carolina at Chapel Hill, 1976), Dentistry.

Research Associate: Ruth S. Georgiade, M.A. (Duke, 1950).

DIVISION OF UROLOGIC SURGERY

Professor: David F. Paulson, M.D. (Duke, 1964), *Chief*.

Professors: E. Everett Anderson, M.D. (Duke, 1958); Lowell R. King, M.D. (Johns Hopkins, 1956).

Associate Professors: Robert A. Bonar, Ph.D. (California at Berkeley, 1953), Biophysics; Culley C. Carson III, M.D. (George Washington, 1971); John L. Weinerth, M.D. (Harvard, 1967).

Associate Clinical Professors: John H. Grimes, M.D. (Northwestern, 1965); Jack Hughes, M.D. (Pennsylvania, 1943).

Assistant Professors: Andrew F. Meyer, M.D. (New York, 1969); Philip J. Walther, M.D., Ph.D. (Duke, 1975); George S. Webster, M.B., Ch.B. (Univ. Coll. of Rhodesia, 1968).

Assistant Medical Research Professors: John W. Day, Ph.D. (Iowa, 1972); Joy L. Ware, Ph.D. (North Carolina at Chapel Hill, 1979); Karen S. Webb, Ph.D. (North Carolina at Chapel Hill, 1973).

Assistant Clinical Professors: A. James Coppridge, M.D. (Virginia, 1953); Joyce D. Coughlin, M.D. (Buffalo, 1944); Hector H. Henry II, M.D. (Tulane, 1965); Sigmund I. Tannenbaum, M.D. (Duke, 1975); Edwin M. Tomlin, M.D. (Tennessee, 1946).

Associate: Steven H. Herman, Ph.D. (Duke, 1977).

Clinical Associates: James A. Bergant, M.D. (Kansas, 1969); Alexander Maitland III, M.D. (Yale, 1955); Randall B. Vanderbeek, M.D. (Duke, 1963).

Clinical Instructors: Oscar W. Brazil, Jr., M.D. (Louisiana, 1961); Raymond E. Joyner, M.D. (Bowman Gray, 1968).

PROGRAM IN HEARING AND SPEECH DISORDERS

Professor: LuVern H. Kunze, Ph.D. (Iowa, 1962), *Director*.

Associate Professor: Bruce A. Weber, Ph.D. (Illinois, 1966).

Assistant Professors: Jennifer Horner, Ph.D. (Florida, 1977); John E. Riski, Ph.D. (Florida, 1976).

Associates: Burton B. King, M.A. (Northwestern, 1955); Robert G. Paul, Ph.D. (Oklahoma, 1969).

Emeriti: Lennox D. Baker, M.D.; John E. Dees, M.D.; Clarence E. Gardner, Jr., M.D.; Keith S. Grimson, M.D.; Guy L. Odom, M.D.; Raymond W. Postlethwait, M.D.; Norman F. Ross, D.D.S.; Will C. Sealy, M.D.; James H. Semans, M.D.

Required Course

SUR-205. The required course in surgery, is given in the second year and consists of an eight week clinical clerkship. The primary goal is the presentation of those concepts and principles which characterize the discipline of surgery. The fundamental features which form the foundation of surgical practice are presented at seminars three times weekly. The subjects discussed include antisepsis, surgical bacteriology, wound healing, inflammation, fluid and electrolyte balance, shock, the metabolic response to trauma, biology of neoplastic disease, gastrointestinal physiology and its derangements, and blood coagulation, thrombosis, and embolism.

The students are divided into two groups, one at Duke and the other at the Veterans Administration Medical Center, and each works with two members of the surgical faculty. Students are assigned patients on the surgical wards for diagnosis and management, and clinical rounds are made three times weekly with the faculty. A full-time teaching resident is assigned for the course in order to provide the students with continuous and readily available instruction at all times. A one hour session is devoted daily to demonstrations by the surgical specialties including neurosurgery, orthopaedics, otolaryngology, plastic surgery, and urology. The students attend a weekly session in experimental surgery, during which each student serves in rotation as the anesthesiologist, first assistant, and operating surgeon in performance of surgical procedures on experimental animals.

Electives

SUR-219(C). Advanced General and Thoracic Surgery (Veterans Administration Medical Center). The student will function as a subintern in surgery. Special attention will be given to those subjects in surgery common to all medical practices. Patients will be assigned to the students who will assume primary responsibility for their care under the supervision of the faculty and residents. The major emphasis will be on physiologic and pathologic changes, diagnosis, indications for operation, and observation of surgical procedures. Weight: 8. *Postlethwait, Grant, Seigler, Stickel, Wechsler, Akwari, and Lowe*

SUR-221(C). Surgical Specialties and Ophthalmology (Veterans Administration Medical Center). The student will attend selected conferences of all the surgical specialties and ophthalmology. Additionally, the student will select two or three of these specialties in which to concentrate experience (on one service at a time) in the operating rooms, clinics, and wards of the VA Medical Center. Pathophysiology, diagnosis, and treatment will be emphasized. Weight: 8. *Grant, Walther, McCuen, Fisher, Friedman, Harrelson, and Barwick*

SUR-222(C). Clinical Dentistry. Normal and abnormal development of head, face, jaws, and oral structures. Importance of teeth for mastication, speech, deglutition, growth and development, esthetics, general health, and for treatment of congenital and acquired abnormalities of the cranium, face, and jaws. Examination, diagnosis, and treatment of pediatric to geriatric oral dental disease. Orthodontic, surgical, and/or orthodontic-surgical management of orodentofacial problems. Weight: 1. *Quinn and Angelillo*

SUR-226(C). Clerkship in Urologic Oncology. The student will learn the clinical presentation, pathophysiology, diagnosis, treatment, and follow-up of patients with urologic malignancies. Emphasis is placed on the principles and practice of urologic oncology, particularly as they apply to solid tumors, and on surgical management of malignant disease, supported by radiotherapeutic and chemotherapeutic adjuncts. Students will participate in pre-, intra-, and postoperative care of patients and will present patient cases at conferences. Students will also be exposed to the design of clinical trials. Weight: 4 or 8. *Paulson*

SUR-227(C). Advanced Urologic Clerkship. The diagnosis, management, and surgical treatment of patients with urologic disorders will be stressed. Students will be afforded intimate association with the entire staff in the clinics, wards, and operating rooms and will participate in surgery. Cystoscopic and urographic diagnostic methods along with other techniques will be taught. Weight: 8. *Anderson, Paulson, King, Weinerth, Webster, Carson, Walther, and Dunnick*

SUR-228(C). Clerkship in Pediatric Urology. Designed to give an overview of urologic problems in the pediatric population. Will include patient contact and seminar material as well as ward and operating room experience in the diagnosis, treatment, and long-term followup of children with urologic disease. Weight: 4. *King*

SUR-230(C). Seminar in Urologic Diseases and Techniques. Lecture-seminar course by members of the staff in urology and radiology, providing an introduction to the spectrum of urologic diseases, amplified by demonstration of urologic and radiologic diagnostic methodology. Clinical problems to be stressed include endocrinopathies, pediatric urology, obstructive uropathies, renovascular hypertension, urinary calculi, and urologic malignancies. Informal seminars given weekly. Weight: 8. *Anderson, Paulson, King, Weinerth, Webster, Carson, Walther, and Dunnick*

SUR-233(C). Basic Neurosurgery Course. Disease conditions commonly encountered in neurosurgery are presented. Clinical presentation of a disorder, such as brain tumor or head injury, is made by a member of the staff. Clinical features and plan of diagnostic investigation are stressed. The clinical disorder is used as a focal point from which to carry the presentation into the basic sciences are related to the clinical problem. Weight: 1. *Cook, Wilkins, Kramer, Oakes, and Friedman*

SUR-234(C). Pediatric Neurosurgery. Survey of the major neurosurgical topics encountered in the pediatric age group. Emphasis will be given to the demonstration of clinical findings, necessary radiographic evaluation and therapeutic alternatives in selected disease processes. Weight: 1. *Oakes and Wilkins*

SUR-235(C). Clinical Neurosurgery. Course is designed for those students with future interest in the neurological sciences. Duties include the workup and care of inpatients, workup of clinic patients, assistants in the operating room, daily rounds, and night call. Weekly conferences are held in neurosurgery, neurology, neuropathology, and neuroradiology. There are also special lectures. Weight: 8. *Wilkins, Nashold, Cook, Kramer, Oakes, and Friedman*

SUR-236(C). Intermediate Clinical Neurosurgery. This elective, intended as an intermediate experience between SUR-233(C) and SUR-235(C), focuses on the clinical presentation of common neurosurgical disorders, radiographic evaluation, and therapeutic options including the indications and contraindications for surgical intervention. The student will work up one to three patients in the evening and assist at their operations the following day either once or twice per week and will attend the 8 A.M. Saturday neurological conference. Prerequisite: permission of instructor. Weight: 1 or 2. *Wilkins*

SUR-237(C). Investigative Neurosurgery. The student is assigned a project relating to the neurological sciences and, within reason, is provided with technical help, recording equipment, and experimental animals necessary for its completion. Each student plans and executes an individual project, with the help of the neurosurgery staff. Attendance at weekly conferences is required. Weight: 8. *Wilkins, Nashold, Kramer, and Friedman*

SUR-239(C). Clinical Otolaryngology. This course will provide the student with a comprehensive survey of clinical otolaryngology. Duties will include participation in both outpatient clinic activities and inpatient care in addition to assisting in the operating room. The student will participate in ward rounds and in the various conferences held by the division. Weight: 4 or 8. *Hudson, Kenan, Cole, Farmer, and Fisher*

SUR-240(C). Otolaryngology Seminar. This conference and demonstration course will provide an introduction to a variety of clinical problems in otolaryngology. Lectures will be supplemented with case presentations illustrating problems encountered in this field. Weight: 1. *Hudson*

SUR-242(C). Biological Basis of Hearing. An examination of the relation of anatomy and physiology of the central auditory system to auditory discriminations. Original papers on neuroanatomy, electrophysiology, and psychophysics of hearing will be read and discussed. Also listed as Psychology 286 in *Graduate School Bulletin*. Weight: 3. *Casseday*

SUR-245(C). Reconstructive Plastic Surgery. A study of broad principles of trauma, wound, healing, and varied reparative processes. Weight: 8. *Serafin, Riefkohl, Barwick, and G. Georgiade*

SUR-246(C). Clerkship in Plastic and Reconstructive Surgery. The student participates in evaluation and management of plastic surgery patients, including preoperative assessment, surgical assistance, and postoperative follow-up in a private office and at Durham County General Hospital. Daily seminars cover core topics such as skin and surgical techniques, wound healing, and scars. Prerequisite: permission of instructor. Weight: 4. *Lanier*

SUR-255(C). Seminar in Medical Speech/Language Pathology and Audiology. Overview of normal speech, hearing and language systems, and consideration of principles of evaluation and rehabilitation of communication disorders including hearing impairments, childhood language disorders, stuttering, aphasia, voice disorders, laryngectomy, and craniofacial anomalies. Weight: 1. *Kunze and Weber*

SUR-259(C). General Principles of Orthopaedics. A full-time or part-time experience on the orthopaedic service with duties and responsibilities similar to a junior intern. Inpatient care, outpatient examination, and operating room experiences are included. Individual or group discussions each day with attending staff. The purpose of the course is to present broad concepts of orthopaedics to students planning general practice, pediatrics, allied surgical specialties, or orthopaedics. Weight: 4 or 8. *Urbaniak, Clippinger, McCollum, Bassett, Harrelson, Hardaker, Nunley, R. Goldner, Garrett, and staff*

SUR-261(C). Office and Ambulatory Orthopaedics. A full or part-time experience on the orthopaedic service with duties and responsibilities similar to a junior intern. Inpatient care, outpatient examination, and operating room experiences are included. Individual or group discussions each day with attending staff. The purpose of the course is to offer clinical experience to students who have completed Surgery 259(C). Rotations will be similar to those of Surgery 259(C). Weight: 8. *Bassett, Clippinger, J. Goldner, McCollum, Urbaniak, Bugg, Coonrad, Lincoln, Glasson, Lang, Frank, Harrelson, Hardaker, R. Goldner, Garrett, and Nunley*

SUR-267(C). Clinical Conference in Cerebral Palsy and Children's Orthopaedics. Conference is arranged for those interested in neurological disease, pediatric orthopaedic problems, and related fields. These conferences demonstrate both the individual and group approach to the patient with complex neurologic conditions as it effects both growth and development. Outpatients and inpatients are utilized for subject material. Staff personnel readily available for individual seminars. Weight: 2 or 4. *Coonrad, Goldner, and cerebral palsy staff*

SUR-276(C). Advanced Clerkship in Pediatric Surgery. This course is designed to familiarize the student with the whole range of surgical problems in children but with emphasis on the pathophysiology of surgical and related problems in the newborn infant and the total care of the child with a malignancy. The student is encouraged to participate fully in the patient care aspects of the service, and is considered an integral part of the patient care team. Although the course may be taken for the full eight weeks, it is felt that a four-week experience is probably optimal for most students. It may be combined with other advanced surgical clerkships, such as Surgery 299(C); or with four weeks of neonatology, Pediatrics 225(C); or other courses depending on the interests of the student. Weight: 4 or 8. *Filston*

SUR-277(C). Orthopaedic Research. Individual projects are assigned for completion during a limited period of time. A student works with an investigator in the orthopaedic laboratory either at Duke Medical Center or the Durham Veterans Administration Medical Center. Clinical investigative studies are also available at both institutions. Weight: 8. *Urbaniak, Harrelson, R. Goldner, Garrett, orthopaedic senior staff, and house staff*

SUR-281(C). Introduction to Fractures and Musculoskeletal Trauma. Students will participate in the emergency management of patients through the Duke Emergency Room primarily, but also through Durham County General and the Durham Veterans Administration Medical Center. Principles of fractures in trauma will be given throughout the week at specified times and attendance at fracture conference will be required. Participation in orthopaedic clinic (seeing patients) one day per week will be required. Weight: 3. *Entire senior staff at Duke and Durham County General, supervision by Dr. Urbaniak at Duke, Dr. Harrelson at VAMC, and Dr. Lang at Durham County General*

SUR-282(C). Advanced Surgery—Emphasis Cancer. Advanced concepts in surgery will be presented in seminars, and in ward, clinic, and operating room experiences. Fifty to 75 percent of the time will be devoted to clinical cancer and related basic topics, and the remainder to surgery generally. Weight: 8. *Seigler, Grant, Irglehart, Leight, and Shingleton*

SUR-283(C). Advanced Surgery—Emphasis Cardiovascular-Thoracic. Advanced concepts in surgery will be presented in seminars and in ward, clinic, and operating room experiences. Fifty to 75 percent of the time will be devoted to cardiovascular-thoracic surgery and related basic topics, and the remainder to surgery generally. Weight: 8. *Sabiston, Jones, Lowe, Oldham, Rankin, Wechsler, Wolfe, and Young*

SUR-284(C). Advanced Surgery—Emphasis Transplantation. Advanced concepts in surgery will be presented in seminars, and in ward, clinics, and operating room experience. Fifty to 75 percent of the time will be devoted to clinical transplantation and related basic topics, and the remainder to surgery generally. Weight: 8. *Bollinger, Amos, Seigler, Stickel, and Weinerth*

SUR-299(C). Advanced Surgical Clerkship. This course is structured to provide the student with a comprehensive approach to surgical disorders. Each student will choose to work in the clinics, or on the wards, in the operating rooms

and in the laboratory with one senior surgeon. Advanced concepts in surgery will be taught and problem-solving techniques will be demonstrated. Weight: 4-8. *Sabiston, Akwari, Bollinger, G. Georgiade, Grant, Inglehart, Jones, Leight, Lowe, Meyers, McCann, Oldham, Peete, Postlethwaite, Rankin, Seigler, Shingleton, Stickel, Wolfe, and Young*

SUR-301(C). Emergency Department Surgical Care. Students desiring additional experience working with care of emergency surgical patients will be assigned to the emergency department one night per week for each credit desired. They will participate in the diagnosis and care of acute and traumatic surgical emergencies. Weight: 1-3. *Stickel and G. Georgiade*

SUR-303(C). Trauma Service. This course is designed to provide students interested in trauma care with further experience both in the Emergency Department and on the inpatient Trauma Service. The course will emphasize both triage and resuscitation for major and minor emergency problems in the Emergency Department and also preoperative and postoperative care on the inpatient Trauma Service. The student will have a full-time experience by assuming duties and responsibilities similar to a junior intern. Emphasis will be placed on developing skills in the care of patients with multisystem injuries in the Emergency Department, Inpatient Service, and Operating Room. Students will work in conjunction with the attending staff and the residents on the trauma service. Weight: 8. *Moylan and G. Georgiade*

SUR-304(C). Nutrition in the Hospitalized Patient. This course is designed to acquaint students with the techniques of nutritional assessment including somatic protein, visceral protein mass, body fat mass, immune competence, and metabolic balance studies. Students will learn to determine basal energy expenditure and nitrogen requirements. The metabolic effects of acute and chronic starvation as well as stress and infection and the role played by these events in the hospital course of patients will be studied. Emphasis will be placed on techniques of nutritional support including routine and specialized hospital diets, routine and modular tube feeding diets, peripheral intravenous protein sparing, and total parenteral nutrition. At the completion of the course, students will have a thorough grasp of clinical nutrition and be able to apply specialized oral diets, tube feeding diets, and intravenous nutrition. Weight: 2. *Grant*

Special Interdisciplinary Course

IND-300(B) or (C). Interdisciplinary Seminar in Medical-Legal-Ethical Issues. The seminar will be composed of students in approximately equal number from the Medical, Divinity, and Law Schools, and will explore important medical, legal, and ethical features of current issues (e.g., transportation, euthanasia, abortion). Faculty and resource persons from all three schools will participate in the seminar. Up to four introductory sessions in the fall semester for all participating students and faculty will be concluded with arrangement of interdisciplinary terms and selected topics. Student teams will meet during the winter and consult at intervals with faculty. All semester participants will reassemble for a series of weekly meetings ending in mid-March, to present and discuss the topics researched. Any topics, properly focused, may be considered. Weight: 2. *Gianturco (medicine), Shimm (law), Smith (divinity) and other faculty members from all three schools*

Special Interdisciplinary Training Programs

BSP-301(B). Biobehavioral Study Program. The focus of the program will be to obtain an understanding of basic processes underlying normal and pathological human behavior. The year-long or two-term experience is designed to familiarize

the medical student with significant developments in the behavioral sciences, investigative methodology used to examine human behavior and its neurobiological underpinnings, and the application of findings to medicine. Each student will be given the opportunity to focus on some determinant of human behavior which may include biological, psychological, developmental, or social factors. The major portion of the student's time will be spent in closely supervised library and laboratory research in an area of the student's interest, resulting in the preparation of a report of the work. To augment the specific interest of the student, either through seminars or guided readings, familiarity with current issues in the biobehavioral sciences will be emphasized. Students enrolled in this program may take courses given in the medical and graduate schools, and it is expected that they will integrate and balance their work with some courses of general medical importance. The faculty for the Biobehavioral Study Program is a multidisciplinary group representing several departments of the Medical School and the University and is involved in a broad range of interests in the determinants of group behavior. Students are encouraged to contact faculty members prior to enrollment in this study program to investigate areas of mutual interest that will form the basis for the supervised research experience.

The following outline describes material from which topics may be chosen for individual research or for discussion in the seminar or guided reading portion of the course. Additional areas, not listed, may be considered.

1. *Orientation to Research in the Biobehavioral Sciences.* Assumptions; measurements; history and philosophy of science; application of computer technology in biobehavioral research.
2. *Biochemical, Endocrinological, Psychopharmacological and Psychological Correlates of Behavior.* Methods and techniques; role of autonomic arousal as relating to psychophysiological experiments; interrelations of CNS and ANS functioning; neurochemical, neuroendocrine, and pharmacological factors affecting normal and abnormal feeling states, states of awareness, cognition, memory, and psychomotor manifestations; effect of CNS catecholamines, hormones, neuropeptides, and behavior; correlations between serum levels of psychotropic drugs and their metabolites and behavior response to drugs; platelet MAO; behavioral untoward effects of psychotropic drugs and their relationships to personality; serum levels of these drugs, and biochemical effects.
3. *Personality and Individual Differences.* Personality theories, psychopathology.
4. *Cognitive Processes.* Intelligence, perception, cognition, ability, learning and development.
5. *Groups and Social Processes.* Social pattern and communication; social deviance; psychological studies of minority groups, sociology of life cycle changes; group dynamics. Weight: 9 units per term. *Program Director: Clifford; Associate Director: Dr. Ellinwood*

CVS-301(B). Cardiovascular-Respiratory Sciences Study Program. The Study Program in Cardiovascular-Respiratory Sciences (CVS) is designed to offer third-year students instruction for one academic year in basic sciences as applied to the understanding of the cardiovascular and respiratory systems in health and disease. The program is interdepartmental in nature and will constitute a full credit load for those students who participate. It is comprised of two parts that run concurrently.

1. *Individual Tutorial.* The student will identify a senior member of the medical school faculty who is participating in the program and whose field of work is in the cardiovascular or respiratory area. The major part of the educational program for the student will be in the form of individual tutorials with this member of the staff. This tutorial may range from full-

time independent research to an intensive study experience for the student. The student and the tutor will develop a plan and the student will review it with the director of the program.

2. *Group Seminar.* A seminar series will be developed according to the needs and desires of the students, the purpose of which is to read and discuss selected papers and/or discuss problems and topics which arise in the course of their tutorial. Students will be active participants in the seminar, and through this mechanism it is hoped to integrate knowledge of cellular physiology into an understanding of organ system function and control. The above plan provides a structured and recommended curriculum design. Within this framework multiple pathways are available because of the concentration of effort in the tutorial experience. Tutorials can be arranged within any of the basic science departments or with individuals in clinical departments whose orientation or research is consistent with the goals of the program. Once a tutor is identified, added flexibility is gained by having the option to elect courses or seminars in addition to the group seminar. Weight: 9 units per term. *Program Director: P. Anderson*

EDR-301(B). Endocrinology and Reproductive Biology Study Program. This interdepartmental program is designed to provide third year medical students with an opportunity for indepth study of cellular endocrinology, neuroendocrinology, and reproductive biology as these relate to the function of the endocrine and reproductive systems in health and disease. In this program, major emphasis is placed on development of a plan of independent study for each student which is based on a tutorial or preceptor association with an individual member of the program faculty. In addition, all members of the program, including faculty, meet regularly for seminars, discussions, and guest lectures on selected topics of interest to the entire group. ANA/PHS 417, PHR-335, and ANA/PHS 418/424 are an integral part of the program. A student normally spends four terms in the program and receives full credit for the medical school advanced basic science requirement. Although the program tradition ally begins in September, its structure is potentially flexible enough to accommodate those who wish to begin in any term, including the summer terms. It should be emphasized that while the primary aim of the program is to provide an intensive experience in endocrinology and reproductive biology, opportunity is provided within the program format for students to broaden their basic science background by taking courses which may be unrelated to the subject matter of the study program.

For all students, the program consists of the following components:

1. *An Individual Tutorial.* This is carried out in association with one or more senior faculty members selected by the student and generally involves laboratory research in a particular area of endocrinology or reproductive biology. Before entering the program, students are asked to complete their tutorial arrangements. In order to facilitate this process, the Program Director will, on request, direct students to appropriate members of the program faculty or other members of the Medical School faculty whose specialty and research interests would permit them to participate in the program.
2. *Lecture Courses.* Specific course offerings in this program are: PHR-335, Molecular Pharmacology; ANA/PHS 417, Cellular Endocrinology; ANA/PHS 418, Reproductive Biology; ANA/PHS 424, Seminar in Reproductive Biology. In order to provide additional breadth of preclinical experience related to immediate or long-term interests, students are encouraged to take up to four units of course work per term. As noted above, individual course selections are not limited to those related to endocrinology or reproductive biology, although consultation with the preceptor is recommended

before making final selections. Weight: 18 units per semester. *Program Director: Schomberg*

EPI-301(B). Epidemiology Study Program. Epidemiology is the study of the distribution and determinants of disease occurrence in human populations. This study program will provide a basic grounding in epidemiologic principles and methods. Seminars, lectures, and research projects are combined to provide a comprehensive experience in quantitative approaches to the study of health and disease in populations.

Epidemiology is a science of growing importance. Its most important role today is the initial identification of causal associations and the formulation of new etiologic hypotheses. Increasingly, epidemiologists are being recognized as specialists in research design and data analysis for studies involving human subjects. The epidemiologic approach particularly lends itself to interdisciplinary research, since it borrows heavily from fields such as genetics, pathology, and immunology. Students will therefore be encouraged to take one or more related basic science courses outside of the study program.

The program will have a core of required courses and seminars supplemented by elective tutorials in areas of special interest. The required courses focus on epidemiologic and biostatistical research methods. Tutorials participation in ongoing research projects or of individual supervised studies. Such study topics will be carefully selected so that they may be completed in a reasonable period of time and lead to publication of results.

Program Core (Required Courses)

1. *Epidemiologic Principles and Methods*. Instructors: Grufferman and Kimm. Topics covered in this course include the study of the distribution of disease in populations, issues in study design, data collection, and methods of analysis. Modules on the subjects of case-control, cohort and cross-sectional studies, clinical trials and intervention studies are presented. Methods are also introduced for assessing and dealing with bias, misclassification, and confounding. Primary reference papers serve as the main text for the course to enable students to gain facility in the critical review of medical literature. Lectures will be supplemented by outside readings, seminars, and student presentations. (Same as CFM-240(B).)
2. *Biostatistics in the Medical Sciences*. Instructor: DeLong. A practical approach to statistical methods and their use in medicine and the related health sciences. Particular emphasis will be placed on issues in the design, conduct, and interpretation of clinical and epidemiologic studies. Topics covered will include data collection and management, as well as tests of statistical significance for rates and ratios as measures of disease risk, survival analysis, variable selection techniques, and multivariate models for disease risk. Examples from real data and the medical literature will be used extensively. Also listed as CFM-215(B).
3. *Topics in Epidemiologic Research (Seminar)*. Instructors: Grufferman and Kimm. The seminars focus on problems in the design and conduct of epidemiologic studies and analysis of data. Discussion is based on faculty and student research projects and supplemented by selected readings. Visiting scientists will be invited to present their work at the seminars. Emphasis will be placed on critical analyses of epidemiologic studies. The range of topics will expose the student to all major aspects of epidemiology (e.g., areas of communicable disease, mental illness and chronic disease epidemiology). Open only to program participants.
4. *Research Projects in Epidemiology*. Instructors: Grufferman and Kimm. Students are required to participate in ongoing research projects or to conduct

supervised studies of their own. A wide range of research topics is available to the student with emphasis on projects which can be completed in a reasonable period of time and lead to publication. Each student will work closely with an appointed preceptor.

Program Core (Optional Course)

Weight: 9 units per term. *Program Director: Dr. Seymour Grufferman*

ISP-301(B). Immunology Study Program. Objectives: this study program is designed for students whose career goals lie in one of the many clinical specialties which interface broadly with immunology: allergy-immunology, infectious diseases, rheumatology, hematology, transplantation, and oncology. A general fund of information is provided in the core course, Medical Immunology (MIC-330B), which emphasizes the role of immunologic mechanisms in various human disease states. Each student chooses a faculty preceptor, with whom an original research project is worked. It is encouraged that the student not be injected into the continuum of the preceptor's research interests but, rather, that an individual project is developed which can be completed during the study program. This laboratory effort may continue for two to four terms. The primary goals of the program are to encourage and develop the student's own creativity, to expose the student to the research interests and philosophies of the entire division and to help the student gain a useful personal perspective on current immunologic thought with an emphasis on clinical relevance.

The student's efforts and time are divided as follows:

1. *Preceptorship.* The major emphasis of the program, during which the student functions much as a graduate student in the division. 30 hours or more per week.
2. *Basic Immunology (MIC-291B).* An in-depth course in the basic concepts of immunology. Analysis of antigens and antibodies is followed by an emphasis on the organization and cellular and molecular aspects of the immune system, its regulation and effector mechanisms. 4 hours per week.
3. *Medical Immunology (MIC-330B).* The basic concepts of immunochemistry and immunobiology are reviewed in the first two weeks, and the remainder of the course describes the role of these concepts in the pathogenesis and treatment of several human disease states. Emphasis is given to tumor immunology, immunohematology, immunologic deficiency diseases, neuro-immunology, transplantation, autoimmunity, inflammation, and allergy. Patient presentations when applicable. Because the course meets daily, more than superficial coverage of the topics can be achieved. 5 hours per week.
4. *Molecular Membrane Biology (MIC304B).* An advanced seminar course that will cover selected aspects of current research on the biogenesis and dynamics of various cellular membranes. Special emphasis will be placed on the cell biology of the immune system. 2 hours per week.
5. *Seminars for Research Progress.* Throughout the year each faculty member, fellow, and student in the division presents a brief informal seminar on on-going research. The discussion that follows is of great help to the presenter and allows the student to observe and participate in critical analysis of research before it is at the polished publication or formal seminar stage. 1 hour per week.
6. *Immunology Division Seminar.* A series of formal seminars by division faculty and visiting scientists. 1-2 hours per week.
7. *Additional Course Work.* The student may elect to take any of several courses in immunology and related fields, but is generally discouraged from excessively diluting the laboratory experience. Weight: 9 units per term. *Program Director: Dr. Cresswell*

IDP-301(B). Infectious Diseases Study Program. Objectives: Knowledge of infectious diseases is relevant to care of patients of all ages and in each clinical specialty from surgery, pediatrics and medicine to obstetrics-gynecology and family medicine. This study program is designed to provide students with the opportunity to directly explore one facet of infectious diseases in a laboratory setting coupled with several lecture/seminar courses designed to provide some breadth of knowledge of the host, microorganism, and their interactions. The goals of the program are to instill a critical assessment of information, to provide the opportunity for creative acquisition of data, to encourage independent thinking, and to provide insight into modern technology as well as to the interrelationship of clinical infectious diseases with basic microbiology and immunology.

Each student selects a faculty preceptor with whom to work on an original research project within the framework of a laboratory's interests but will design his own experiments, critically assess the relevant literature, learn to evaluate data, and have the opportunity to solve the problems associated with the project. Appropriate guidance and assistance will be provided by the faculty and others within the laboratory setting.

1. *Preceptorship.* This is the major emphasis of the program, with students functioning essentially as graduate students. 30 hours or more per week.
2. *Courses.* During the fall term students will be required to take one course, Principles of Infectious Disease (MIC-301B). This course provides discussion of the basic biology of a broad spectrum of microorganisms, the diseases they cause, and the host response to these infections. The first eight weeks of the term is devoted to bacterial infections and is organized by organ system. In the second eight weeks, viral diseases are presented, ranging from intrauterine infections to oncogenes.

During the spring term students will be required to take either Medical Immunology (MIC-330B) or Virology and Viral Oncology (MIC-252B), the selection being determined by the student's laboratory research interests.

3. *Seminars.* Students in the Infectious Diseases Program will attend a weekly seminar in which faculty members, fellows and students present their ongoing research. Such presentations enable the student to observe and participate in critical analysis of research before it reaches the publication stage.
4. *Additional Course Work.* Whereas other basic science electives in microbiology and immunology may be taken upon approval by the Program Director, the student is discouraged from excessively diluting his laboratory experience. Weight: 18 per semester. *Program Directors: Dr. Jack D. Keene and Dr. Catherine Wilfert*

MCD-301(B). Molecular and Cellular Basis of Differentiation Study Program. Objectives: recent advances in molecular and cell biology provide new concepts in the area of developmental biology. This program is designed to give the medical student an appreciation of the phenomena of development as well as advanced training in a variety of biomedical disciplines. In order to provide a comprehensive coverage for many areas the program has been organized on a multidisciplinary level.

Particular emphasis is placed on the biochemistry of the cell surface as a basis of cell recognition, control of the cell cycle, and overall tissue organization. An analysis of protein nucleic acid interactions in chromosome structure and function are considered in the light of newer concepts of transcriptional and translational control. Studies also include nuclear cytoplasmic interactions as well as hormone

induction of differentiation and development. The rapidly expanding body of knowledge gained from these approaches will be examined by the medical student through seminars. The program provides an opportunity for the medical student to obtain an introduction to advanced training or research in a field of study of interest, including hematology, endocrinology, pediatrics, and immunology.

The program can be selected by the student for one or two semesters. First Semester: the first semester will consist of (1) a series of lectures given three times a week to cover basic principles, and (2) a series of seminars conducted by the students under the guidance of the faculty. The student will learn through direct observation, participation, and discussion with the staff.

The students will meet Monday, Wednesday, and Friday at 11:20-12:10 to attend the introductory course in development and differentiation. This course covers basic principles and is taught by the entire faculty for the purpose of establishing a firm foundation for the more advanced studies to be given in the second semester. The students will also prepare and attend seminars in differentiation and development. These seminars will be conducted by the students under the guidance of the faculty.

Upon entrance into the program the student will be interviewed by the faculty to suggest a program that will complement a future medical career. Students may also elect to spend part of their time in a library project under close faculty supervision, to be presented in an in-depth seminar. As a general rule, mornings are reserved for course work and the afternoons for library tutorials.

Second Semester: the students in the second semester will attend an advanced course in development (#224) as well as other appropriate courses comprising the study program. It should be emphasized that the student is provided considerable flexibility in this program since there is no penalty for taking eighteen hours of course work for the first semester only. Weight: 18 per semester. *Cochairmen: McCarty and Counce*

MDP-301(B). Molecular Development Study Program. Objectives: This study program is designed to introduce students to forefront research in the disciplines of molecular genetics and developmental biology. The program focuses on laboratory investigation of the genetic basis of gene expression with respect to protein-nucleic acid interactions and regulatory mechanisms involved in the differentiation of cell lineages. A wide variety of innovative technologies are being developed and applied by faculty members in this program and students entering the program will participate in these efforts. Thus, methods of gene cloning and recombinant DNA are used to isolate genes that control or influence the replication of DNA, the transcription of cellular and viral genes, and the processing (splicing) of messenger RNA. These approaches are directed towards understanding how cells grow and differentiate, with ultimate goal of manipulating genetic material for gene therapy and repair. Students are expected to engage in the following schedule:

1. *Preceptorship*: This constitutes the major focus of the program and the students will function essentially as graduate students working in the laboratory on a full time basis.
2. *Courses*: During the fall term a three-unit course will be required in either Molecular Genetics (BCH-215) or Advanced Cell Biology (MIC-269) in order to provide the background needed for the laboratory work. During the spring term six units of course work will be required consisting of four units of Virology and Viral Oncology (MIC-252) and two units of Molecular Development (MIC-310).
3. *Seminars*: Medical students in the Molecular Development Program will attend a weekly seminar program in the Department of Microbiology and Immunology that will in some weeks include the entire Department with

invited speakers and in other weeks will involve smaller meetings with faculty and other students in the program in order to assess the students' progress. This will constitute one unit of course work.

4. *Other Courses:* Other courses of a related nature concerning basic knowledge in molecular genetics and development may be taken upon consultation with the program director. These courses should not interfere with the students' time and efforts in the laboratory. Weight: 18 per semester.
Program Director: Dr. Keene; Associate Program Director: Dr. Linney

NSS-301(B). Neurosciences Study Program. The neurosciences study program offers the opportunity to learn basic sciences by carrying out a research project focused on the nervous system under careful supervision. Fundamental principles of physiology, biochemistry, pharmacology, and anatomy will be learned through informal study of organization and cellular neuroscience. The program lasts thirty-two weeks and emphasizes a basic research experience under the guidance of a preceptor, a monthly seminar with visiting neuroscientists and the opportunity to audit appropriate neurobiology courses during the year. Students will be encouraged to read widely in areas of basic science under the tutelage of their preceptor and the program directors. Although this program emphasizes neuroscience, it is a meaningful way to learn basic science for students planning careers in subspecialties of internal medicine such as neurology, endocrinology, cardiology, metabolic diseases, and those interested in careers in psychiatry, ophthalmology, pediatrics, or surgery. Weight: 18 per semester.

1. *Research Experiences:* The basic component of the Neurosciences Study Program is an indepth research experience in a basic science laboratory under the supervision of one of the participating faculty. The student is expected to use ongoing techniques in the laboratory to pursue a research problem and learn principles of experimental design, analytical techniques, statistics and scientific writing. No more than one student per research advisor is recommended.
2. *Seminar:* Throughout the year, students and faculty members meet monthly to informally review ongoing research. Most of these seminars are presented by visiting neuroscientists and allow the student to participate in open, critical discussion of laboratory investigations. Students are expected to present seminars in this context to help develop skills in presenting scientific information clearly and concisely.
3. *Formal Lectures:* The Neurosciences Study Program is an informal learning experience in which students are encouraged and supervised in acquiring basic science information at their own pace. Students are discouraged from concurrently enrolling in other courses but are encouraged to audit appropriate courses during the year and to attend clinical and basic neuroscience conferences at the University.
4. *Participating Faculty:*

Dr. Mohamed B. Abou Donia, (neurotoxicology). Major research interests are in the field of neurotoxicology including the mechanisms of neurotoxic actions, interactions, and pharmacokinetics of neurotoxins. These chemicals include organophosphorus esters capable of causing delayed neurotoxicity and organic solvents.

Dr. Nell B. Cant, (neuroanatomy). Neuroanatomy of the auditory system; correlations of structure (synaptic organization) and function. Development of the auditory system.

Dr. James N. Davis, (neuropharmacology). Neuronal rearrangements after brain injury. The laboratory uses brain catecholamine neurons as models for understanding neuronal plasticity using anatomical and biochemical techniques with an emphasis on neurotransmitter recep-

tor pharmacology and brain anatomy.

Dr. Irving Diamond, (neurophysiology). The neocortex, its functional and structural subdivisions, and its evolution. The structural subdivision depends on the differences in laminar organization, for example, cytoarchitectonics, and most important, on connections. The concern for the cortex naturally leads to the study of the dorsal thalamus since the projections from the thalamus to cortex hold the key to understanding the organization of cortex.

Dr. Doyle G. Graham, (neuropathology). We are studying a group of neurotoxins which have a common feature, that of neurofilament accumulation within the axon and these include hexane, acrylamide, carbondisulfide, and IDPN.

Dr. William C. Hall, (neuroanatomy). Anatomical and physiological basis for sensori-motor integration in the central nervous system: the role of the superior colliculus in the control of eye movements.

Dr. Frans Jöbsis, (neurophysiology). Cerebral oxidative metabolism, *in vivo* monitoring of brain cellular metabolism in animals and man.

Dr. Norman Kirshner, (neuropharmacology). Biogenesis of chromaffin vesicles; mechanisms of catecholamine synthesis and secretion.

Dr. C.-S. Lin, (neuroanatomy). The mechanisms underlying the functional organization and reorganization at the level of single neurons. Combined neuroanatomical, neurophysiological, and immunocytochemical techniques will be used.

Dr. James McNamara, (neuropharmacology). Biochemical basis of epilepsy; studies of brain neurotransmitter receptors in animal models of seizures; study of the functional neuroanatomy of brain structures underlying seizures.

Dr. John W. Moore, (neurophysiology). Biophysics and physiology of nerve impulse propagation and synaptic transmission; computer modeling of neurons and networks.

Dr. J. Victor Nadler, (neuropharmacology). Excitatory amino acid neurotransmitters, models of temporal lobe epilepsy, neuronal plasticity and recovery of function after lesions.

Dr. Saul Schanberg, (neuropharmacology). Animal model of the maternal deprivation syndrome; regulation of hormone responses by the brain; neuropharmacology of amphetamines.

Dr. Donald Schmechel, (neuroanatomy). Classification and characterization of neurons in the thalamus and cortex. Current topics include subtypes of GABAergic inhibiting neurons and metabolic differences in neuronal subsets.

Dr. Theodore A. Slotkin, (neuropharmacology). Development of nervous system with particular attention to processes regulating maturation of synapses. Ongoing research includes studies of molecular biology of developing neurons, physiological function of autonomic pathways and adverse effects of exposure of the developing animal to toxic chemicals, drugs of abuse, or environmental stress.

Dr. George Somjen, (neurophysiology). The pathophysiology of the mammalian central nervous system is studied by electrophysiological and electrochemical techniques. Special topics include the mechanisms of seizures, the nature of hypoxic damage to the brain, and the regulation of ion concentrations in the brain.

Dr. Wilkie A. Wilson, (neuropharmacology). The laboratory is exploring the regulation of excitability in the nervous system by physiological and pharmacological processes. Electrophysiological techniques

are employed, using neural networks from both mammals and invertebrates.

5. *Codirectors*: Dr. James Davis and Dr. Wilkie Wilson

PSP-301(B). Pathology Study Program. The goal of this program is to provide an independent learning experience in problems related to the nature of disease with active participation of the student with an individual faculty member. This will involve some type of research and will be by far the main activity of the program. Students who are interested in participating should see either Dr. Hackel, Dr. Bradford or Dr. Vogel for details and a description of the different projects that are available. In addition to this research experience there will be a series of lectures by the faculty on Systemic Pathology which will be given each Monday and Wednesday from 4-5 p.m.; and a seminar will be held on Fridays at which students will be able to discuss the subject matter of their project. The minimum time for a student to participate in the program is eight weeks, although most of the projects will require longer than this (the full thirty-two weeks is required by some preceptors), and each student will be guided by the minimal time acceptable to his/her selected preceptor. Weight: 18 per semester. *Program Directors: Drs. Hackel, Bradford and Vogel*

ROSTER OF HOUSE STAFF BY DEPARTMENTS

Anesthesiology

Chief Residents: William A. Wilson, M.D. (Wayne State, 1981); Keith D. Knopes, M.D. (Stanford, 1981).

Senior Residents: Mohammed A. Assadi, M.D. (Mysore Medical College, India, 1978); Sidney J. Bennett, M.D. (Far Eastern Univ. Med. School, Manila, Philippines, 1980); Gregory F. Brusino, M.D. (New York at Buffalo, 1983); Richard G. Burke, M.D. (Rochester, 1983); Steve A. Dubin, M.D. (Albert Einstein, 1983); John E. Elliott, M.D. (Cincinnati, 1983); Patricia M. Estok, M.D. (Miami, 1983); Lloyd J. Faul, M.D. (Virginia, 1982); Gregory G. Hall, M.D. (Duke, 1983); H. David Hardman, M.D. (Minnesota, 1981); Russell F. Hill, M.D. (Emory, 1982); Holly G. Jense, M.D. (Albert Einstein, 1983); Keith D. Knopes, M.D. (Stanford, 1981); James T. Massagee, M.D. (North Carolina at Chapel Hill, 1978); Deivid O. Miller, M.D. (Duke, 1983); Philip R. Mitchell, M.D. (Univ. of Cape Town, South Africa, 1980); David Mordecai, M.D. (Stanford, 1980); Kevin D. Ossey, M.D. (Univ. of Cape Town, South Africa, 1981); John V. Parham, Jr., M.D. (Mississippi, 1978); Stephen J. Parrillo, M.D. (Univ. of Bologna, Italy, 1982); Ronnie H. Ruff, M.D. (California, 1982); Edward T. Scruggs, M.D. (Alabama, 1983); Carleton A. Smith, M.D. (Wayne State, 1976); William A. Wilson, M.D. (Wayne State, 1982).

Junior Residents: L. John Aladi, M.D. (Eastern Virginia, 1981); Steven M. Bird, M.D. (New Mexico, 1984); Dale C. Buchanan, M.D. (Clemson, 1972); William P. Bundschuh, M.D. (Purdue, 1980); George E. Fant, M.D. (Tennessee, 1984); Luis Gonzalez-Cuni, M.D. (Miami, 1979); Barrett C. Hall, M.D. (Oklahoma, 1980); Howard G. Hochman, M.D. (Miami, 1984); Timothy P. Knapman, M.D. (Michigan, 1979); Gennard T. Lanzara, M.D. (Virginia, 1984); Kevin B. Sharer, M.D. (Illinois, 1984); Richard B. Watson, M.D. (Tulane, 1980).

Family Medicine

Chief Residents: M. Patrice Eiff, M.D. (Wisconsin, 1983); Jane Satter, M.D. (California at San Francisco, 1983); Kurt C. Stange, M.D. (Albany, 1983).

Residents: Susan M. Balling, M.D. (New York at Stony Brook, 1985); L. Faith Birmingham, M.D. (Duke, 1981); Gary B. Blume, M.D. (Northwestern, 1985); Laura J. Booth, M.D. (New York at Buffalo, 1982); Ora N. Botwinick, M.D. (Mount Sinai, 1983); Sarah B. Cornwell, M.D. (Duke, 1985); Kenneth L. Crutcher, M.D. (Duke, 1984); Amy R. Csorba, M.D. (Duke, 1984); H. Jackson Downey, M.D. (Florida, 1983); Darlene S. Eldredge, M.D. (New York at Buffalo, 1985); Jonathan E. Fountain, M.D. (Florida, 1984); Glenn J. Fox, M.D. (Missouri, 1984); William L. Gottesman, M.D. (Duke, 1983); Mary Lisa Gunning, M.D. (Jefferson, 1985); Richard M. Hays, M.D. (Florida, 1983); J. Carver Hill, M.D. (North Carolina at Chapel Hill, 1984); Suzanne Johannet, M.D. (Harvard, 1984); Victoria S. Kaprielian, M.D. (California at Los Angeles, 1985); John G. King, M.D. (Rochester, 1984); Jonathan E. Klein, M.D. (New York at Syracuse, 1984); Mary E. Kniffin, M.D. (Missouri, 1984); Michael J. Lemanski, M.D. (Massachusetts, 1983); Ann C. Marty, M.D. (Missouri, 1985); Diane S. Morrow, M.D. (Missouri, 1983); Maureen E. Murphy, M.D. (Kansas, 1985); Jane H. Murray, M.D. (North Carolina at Chapel Hill, 1985); Karen L. Musolf, M.D. (Wisconsin, 1985); Elisabeth B. Nadler, M.D. (New York Univ., 1985); Sandra J. Newton, M.D. (Wayne State, 1984); Coin T. Page, M.D. (North Carolina at Chapel Hill, 1983); Annette L. Sobel, M.D. (Case Western Reserve, 1983); Albert A. Verrilli, M.D. (Case Western Reserve, 1984); Mark W. Woodruff, M.D. (Tufts, 1985); Kimberly S. Yarnall, M.D. (Florida, 1985).

Fellows: Hershey S. Bell, M.D. (Univ. of Toronto, 1982); James J. Schulte, M.D. (Northwestern, 1982).

Medicine

Chief Residents: Victor F. Tapon, M.D. (Hahnemann, 1982); Rita M. Willett, M.D. (Washington Univ., 1980).

Senior Assistant Residents: Camille L. Bedrosian, M.D. (Harvard, 1983); Jonathan J. Berry, M.D. (Pennsylvania, 1983); David S. Borislow, M.D. (Johns Hopkins, 1983); Michael R. Cooper, M.D. (Duke, 1983); Billy W. Evans, M.D. (Arkansas, 1983); L. Sue Frederick, M.D. (Duke, 1983); Thomas G. Fulghum, M.D. (Duke, 1983); Kirk N. Garratt, M.D. (California at Irvine, 1983); Bruce J. Gould, M.D. (Jefferson, 1983); Paul A. Gurbel, M.D. (Maryland, 1983); Robert H. Haber, M.D. (Mount Sinai, 1983); Paula K. Harland, M.D. (Duke, 1983); Margo E. Heath, M.D. (Utah, 1983); Donald L. Heine, M.D. (Johns Hopkins, 1983); Debra A. Heldman, M.D. (Ohio, 1983); William R. Herzog, M.D. (Duke, 1982); Michael B. Honan, M.D. (Alabama, 1983); Donald J. Jacob, M.D. (Ohio, 1983); Joan T. Jordan, M.D. (Duke, 1983); Peter A. Kaufman, M.D. (New York Univ., 1983); Virginia B. Kraus, M.D. (Duke, 1982); William E. Kraus, M.D. (Duke, 1982); Peter J. Mannon, M.D. (Boston, 1983); Kevin R. McConnell, M.D. (George Washington, 1983); Kenneth B. Newman, M.D. (Texas at Houston, 1983); Lina-Marie Obeid, M.D. (American Univ., Beirut, 1983); Christopher M. O'Connor, M.D. (Maryland, 1983); Laurence G. Rotkin, M.D. (Miami, 1983); David C. Sane, M.D. (Duke, 1983); Elise E. Schriver, M.D. (Tennessee, 1983); Ronald A. Scott, M.D. (Texas at Houston, 1983); Gail Shaw, M.D. (North Carolina at Chapel Hill, 1983); Theresa A. Travis, M.D. (Indiana, 1983); Sanjay S. Yadav, M.D. (West Virginia, 1983).

Junior Assistant Residents: J. Peter Cegielski, M.D. (California at San Diego, 1984); Augustine M. K. Choi, M.D. (Louisville, 1984); Deirdre M. Collins, M.D. (Thomas Jefferson, 1984); James P. Daubert, M.D. (Jefferson, 1984); Robb W. Glenny, M.D. (Virginia, 1984); Mark R. Hughes, M.D. (Baylor, 1984); Robert G. Kilbourn, M.D. (Texas at Houston, 1984); Jerome H. Kim, M.D. (Yale, 1984); David A. Knapp, M.D. (California at San Diego, 1984); Kirk U. Knowlton, M.D. (Utah, 1984); Sarah S. Kratz, M.D. (North Carolina at Chapel Hill, 1984); Amelia A. Langston, M.D. (Washington Univ., 1984); Richard L. Leff, M.D. (Yale, 1984); George C. Li, M.D. (Baylor, 1984); Gary R. Lichtenstein, M.D. (Mount Sinai, 1984); Douglas R. Martel, M.D. (Texas at San Antonio, 1984); Perry G. McLimore, M.D. (Louisville, 1984); Mark R. Milunski, M.D. (Albany, 1984); Charles K. Moore, M.D. (Washington Univ., 1984); Randall W. Moreadith, M.D. (Duke, 1984); Dexter L. Morris, M.D. (Baylor, 1984); Richard M. Mortensen, M.D. (Cornell, 1984); J. Brent Muhlestein, M.D. (Utah, 1984); Frank I. Navetta, M.D. (New York Med. Coll., 1984); James J. Onorato, M.D. (Case Western Reserve, 1984); Joel Picus, M.D. (Miami, 1984); Kevin R. Porter, M.D. (Duke, 1983); Rolando D. Rodriquez, M.D. (South Florida, 1984); Maureen Ross, M.D. (Miami, 1984); Thomas F. Trahey, M.D. (Bowman Gray, 1984); Catherine B. Treseler, M.D. (Duke, 1984); Flordeliza S. Villanueva, M.D. (Boston, 1984); Marcelus A. Walker, M.D. (Illinois, 1984); Kevin B. Waters, M.D. (New Mexico, 1984); Russell D. Yang, M.D. (Baylor, 1984).

Interns: Roslyn J. Bernstein, M.D. (Duke, 1985); Powel H. Brown, M.D. (New York Univ., 1985); Paul T. Campbell, M.D. (Temple, 1985); Carol S. Dukes, M.D. (Utah, 1985); James G. Ebeling, M.D. (Duke, 1985); Philip N. Efron, M.D. (Johns Hopkins, 1985); Katherine A. Enright, M.D. (Duke, 1985); Ruth A. Greenfield, M.D. (Duke, 1985); Mark D. Hannis, M.D. (Tennessee, 1985); Victor W. Hsu, M.D. (Yale, 1985); Michael J. Kelley, M.D. (Michigan, 1985); Richard T. Kenney, M.D. (Harvard, 1985); Robert J. Kreitman, M.D. (Ohio State, 1985); Peter S. Kussin, M.D. (Mount Sinai, 1985); Michael B. Lambert, M.D. (Oklahoma, 1985); David R. Lichtenstein, M.D. (Pennsylvania, 1985); Michael S. Manning, M.D. (Alabama, 1985); Susan Manzi, M.D. (Pittsburgh, 1985); Michael J. Miller, M.D. (Pittsburgh, 1985); Doris S. Mugrditchian, M.D. (Washington, 1985); Eugene A. Oddone, M.D. (Colorado, 1985); Conor W. O'Neill, M.D. (Washington Univ., 1985); Thomas L. Ortel, M.D. (Indiana, 1985); Erik K. Paulson, M.D. (Duke, 1985); Elise H. Pyun, M.D. (Boston, 1985); Cynthia L. Reitz, M.D. (Louisiana State, 1985); Fraser M. Richards, M.D. (Minnesota, 1980); Steven S. Rosenfeld, M.D. (Northwestern, 1985); Michael L. Russell, M.D. (North Carolina at Chapel Hill, 1985); Stephen R. Smith, M.D. (Duke, 1985); Nicholas D. Snow, M.D. (Ohio, 1985); Robert A. Sorrentino, M.D. (Albany, 1985); Paul W. Spertuto, M.D. (Duke, 1984); Loyal G. Tillotson, M.D. (Harvard, 1985); Rosanne R. Travelute, M.D. (Kansas, 1985); Patrick A. Treseler, M.D. (Duke, 1985); Debasish Tripathy, M.D. (Duke, 1985); Mary L. Vogelsang, M.D. (Missouri, 1985); David C. Whitcomb, M.D. (Ohio, 1985); Jeffrey G. Wong, M.D. (Utah, 1985).

Fellows: Richard D. Adamick, M.D. (Stanford, 1980); James N. Barianuk, M.D. (Univ. of Manitoba, 1981); John A. Bartlett, M.D. (Virginia, 1981); Robert P. Bauman, M.D. (Wayne State, 1977); Robert E. Beach, M.D. (Louisiana State, 1979); Robert N. Belkin, M.D. (Cornell, 1980); Raye L. Bellinger, M.D. (Southwestern, 1982); Joseph L. Blackshear, M.D. (Mayo, 1978); Christine G. Bounous, M.D. (Duke, 1982); Stephen J. Brandt, M.D. (Emory, 1981); Scott R. Brazer, M.D. (Case Western Reserve, 1981); W. Blair Brooks, M.D. (Dartmouth, 1979); Gregory K. Buller, M.D. (Kansas, 1980); William T. Cahill, M.D. (Georgetown, 1979); Michael R. Cairns, M.D. (Jefferson, 1980); Stephen D. Campbell, M.D. (Maryland, 1981); John Lai C. Ch'ng, M.D. (Singapore, 1977); Peng-Sheng Chen, M.D. (National Taiwan, 1979); Gary J. Collins, M.D. (Uniformed Services Univ., 1982); Paul R. Conkling, M.D. (Ohio State, 1982); C. Christine Cox, M.D. (North Carolina at Chapel Hill, 1980); Edgardo A. Crisostomo, M.D. (Univ. of Santo Tomas, 1976); Tyler J. Curiel, M.D. (Duke, 1982); Stephen M. Denning, M.D. (Duke, 1980); Charles J. Davidson, M.D. (Connecticut, 1982); Philip Dien, M.D. (Dartmouth, 1981); Basim Dubaybo, M.D. (American Univ., Beirut, 1980); Robert A. Durr, M.D. (New York at Buffalo, 1980); Kenneth A. Ellenbogen, M.D. (Johns Hopkins, 1980); Micahel P. Fenely, M.D. (Univ. of New South Wales, 1978); Joseph V. Follett, M.D. (Alberta, 1981); Philip J. Fracica, M.D. (New York Downstate, 1981); F. Roosevelt Gilliam, M.D. (Duke, 1981); Georgia L. Gilliam, M.D. (Univ. of Innsbruck, 1978); Larry B. Goldstein, M.D. (Mount Sinai, 1981); Joel A. Greenberg, M.D. (Miami, 1981); G. Stephen Greer, M.D. (Arkansas, 1981); David L. Halsey, M.D. (Michigan, 1981); Neil B. Hampson, M.D. (Washington, 1981); Yusuf A. Hannun, M.D. (American Univ., Beirut, 1981); Lowell L. Hart, M.D. (New York, Upstate, 1980); Robert A. Havard, M.D. (California at Los Angeles, 1980); Ann Haviland, M.D. (Wayne State, 1980); Mark A. Hellreich, M.D. (Bowman Gray, 1981); Elizabeth Henke, M.D. (Welsh National School of Med., 1976); Andrew A. Hertler, M.D. (Michigan, 1982); Steven I. Himmelstein, M.D. (Tennessee, 1982); Pamela J. Honeycutt, M.D. (Duke, 1981); Nancy Hooyman, M.D. (St. Louis, 1977); Jodie L. Hurwitz, M.D. (Albert Einstein, 1981); James M. Irwin, M.D. (Hershey, 1982); Frederick S. Jones, M.D. (Rush, 1979); Joanne M. Jordan, M.D. (Johns Hopkins, 1981); Jeffrey R. Joyner, M.D. (Illinois, 1981); Donald A. Jurivich, M.D. (Chicago Coll. of Osteopathic Medicine, 1982); Peter W. Kaplan, M.D. (St. Bartholomew's, 1977); Dennis Karounos, M.D. (Kentucky, 1980); G. Neal Kay, M.D. (Michigan, 1979); G. Wallace Kernodle, M.D. (North Carolina at Chapel Hill, 1981); Brian K. Kolbilka, M.D. (Yale, 1981); Gary G. Kochersberger, M.D. (Tel Aviv Univ., 1982); David A. Krendel, M.D. (Hahnemann, 1980); Gunther J. Lallinger, M.D. (Univ. of Munich, 1972); Conor F. Lundergan, M.D. (Georgetown, 1982); Anne G. Marchese, M.D. (Columbia, 1979); Mary F. Maturi, M.D. (Northwestern, 1978); Rex M. McCallum,

M.D. (Vanderbilt, 1980); Linville M. Meadows, M.D. (North Carolina at Chapel Hill, 1982); Roderick B. Meese, M.D. (Cincinnati, 1981); Robert E. Mitchell, M.D. (Virginia, 1982); Elliot M. Morris, M.D. (Rensselaer Polytech. Instit., 1980); Pamela B. Morris, M.D. (Duke, 1981); Manfred P. Mueller, M.D. (Indiana, 1982); John J. Murray, M.D. (Massachusetts, 1975); Michael N. Neuss, M.D. (Duke, 1979); Frank Noodleman, M.D. (Minnesota, 1979); William O'Callaghan, M.D. (Univ. Coll., Dublin, 1977); Mark A. O'Rourke, M.D. (California at Los Angeles, 1982); William J. Parsons, M.D. (Dartmouth, 1980); Jose A. Perez, M.D. (Southwestern, 1982); George B. Pierson, M.D. (Kansas, 1981); David M. Poorbaugh, M.D. (New Mexico, 1982); Kate T. Queen, M.D. (North Carolina at Chapel Hill, 1981); James E. Ramage, M.D. (Duke, 1981); Norman M. Ramirez, M.D. (Stanford, 1981); John R. Raymond, M.D. (Ohio, 1982); Mark E. Reese, M.D. (South Alabama, 1982); Pradeep Sahota, M.D. (Punjab Univ., 1980); Robert G. Shellman, M.D. (New York Upstate, 1981); David L. Simel, M.D. (Duke, 1980); Charles A. Simonton, M.D. (Harvard, 1980); Anthony L. Sintetos, M.D. (Georgetown, 1981); Deborah S. Skelton, M.D. (Mississippi, 1981); Thomas N. Skelton, M.D. (Mississippi, 1981); P. Travis Smith, M.D. (Utah, 1980); Dennis L. Sprecher, M.D. (Boston, 1978); George H. Steele, M.D. (North Carolina at Chapel Hill, 1981); Charles R. Stewart, M.D. (Tulane, 1977); Alan C. Street, M.D. (Univ. of Melbourne, 1980); Stephanie A. Studenski, M.D. (Kansas, 1979); Martin J. Sullivan, M.D. (Ohio State, 1980); Fred J. Thaler, M.D. (Washington, 1980); Katherine A. Thompson, M.D. (Duke, 1980); Pierre L. Triozzi, M.D. (Ohio, 1980); Humberto Vidaillet, M.D. (Oklahoma, 1981); Shawnee Weir, M.D. (Minnesota, 1980); Robert F. Werkman, M.D. (Jefferson, 1980); Mark H. Werner, M.D. (Bowman Gray, 1981); J. Marcus Wharton, M.D. (Vanderbilt, 1980); Melinda Wharton, M.D. (Harvard, 1980); Harry White, M.D. (Med. Coll. of Virginia, 1981).

DIVISION OF DERMATOLOGY

David L. Kaplan, M.D. (Bowman Gray, 1981); Barry J. Kuttner, M.D. (New York, Downstate, 1982); Virginia Lightner, M.D. (Duke, 1982); Christopher A. Moeller, M.D. (Iowa, 1983); Anamari Pestana, M.D. (Miami, 1983); Hazel J. Vernon, M.D. (Washington Univ., 1983); Walter W. Weed, M.D. (Arkansas, 1982); Raymond H. Welch, M.D. (Albany, 1981); David I. Wolf, M.D. (California at San Francisco, 1981).

DIVISION OF NEUROLOGY

Mark J. Alberts, M.D. (Tufts, 1982); Peter R. H. Clarke, M.D. (Michigan, 1983); J. Thaddeus Coin, M.D. (Duke, 1984); Kristina A. Dahl, M.D. (Rush, 1983); Nancy L. Earle, M.D. (North Carolina at Chapel Hill, 1982); Lewis M. Fredane, M.D. (Albert Einstein, 1979); Steven J. Greenberg, M.D. (New York, Downstate, 1975); Marian F. Griffiths, M.D. (Tufts, 1982); Kenneth W. Holmes, M.D. (Chicago, 1984); David A. Hosford, M.D. (Emory, 1983); Daniel J. Howley, M.D. (Temple, 1979); Jeffrey M. Vance, M.D. (Duke, 1984).

Obstetrics and Gynecology

Chief Residents: Henry Easley, M.D., J.D. (North Carolina at Chapel Hill, 1982); Joyce McKenney, M.D., M.P.H. (Washington, 1982); Deborah Metzger, M.D., Ph.D. (Texas, 1982); Vernon Stringer, M.D. (Duke, 1982); Chrystie Timmons, M.D., M.A. (North Carolina at Chapel Hill, 1982); Roger Young, M.D., Ph.D. (North Carolina at Chapel Hill, 1982).

Assistant Residents: James Allen, M.D. (Rutgers, 1982); Christin Babcock, M.D. (North Carolina at Chapel Hill, 1983); Dwight Bailey-Pridham, M.D. (California at San Diego, 1983); Theodore Blaszczuk, M.D. (Northwestern, 1983); Grace Couchman, M.D. (Colorado, 1985); Wesley Hambright, M.D. (Duke, 1982); Gerianne Holcomb, M.D. (Duke, 1985); MaryLee Howell, M.D. (Vanderbilt, 1984); Bradley Hurst, M.D. (Texas at Houston, 1984); Richard Huslig, M.D., Ph.D. (Miami, 1985); Susan Jenkins, M.D. (Duke 1985); Bruce Lessey, M.D., Ph.D. (Colorado, 1984); Paul Marshburn, M.D. (Emory, 1984); L. Stewart Massad, M.D. (Duke, 1984); George Olt, M.D. (Cincinnati, 1984); Elizabeth Raymond, M.D. (Columbia, 1984); John Schmitt, M.D. (Texas at San Antonio, 1983); L. Lewis Wall, M.D. (Kansas, 1983).

Ophthalmology

Chief Residents on rotating basis.

Residents: Andrew Antoszyk, M.D. (New York Med. Coll., 1983); Ann Joslyn, M.D. (Duke, 1984); Cathryn Karlin, M.D. (Cornell, 1983); James Lewis, M.D. (Jefferson, 1977); Miguel Lugo, M.D. (Temple, 1981); Bettina B. Meekins, M.D. (Miami, 1978); David Robinson, M.D. (Duke, 1983); George Rosenwasser, M.D. (Miami, 1983); George Rozakis, M.D. (Cornell, 1982); Raymond Shelton, M.D. (Duke, 1982); Steven Shields, M.D. (Mississippi, 1984); Kent Small, M.D. (Duke, 1981); Edward A. Tsou, M.D. (Maryland, 1979); Michael T. Vu, M.D. (Duke, 1984); Robert Wiggins, M.D. (North Carolina at Chapel Hill, 1982); Keye L. Wong, M.D. (Rush, 1982).

Pathology

Residents: Sebastian Alston, M.D. (North Carolina at Chapel Hill, 1985); Douglas Anthony,

M.D., Ph.D. (Duke, 1984); Susan Atwater-Boyd, M.D. (Duke 1985); Timothy Benning, M.D. (Rochester, 1985); Helen Cathro, M.D. (Dundee, 1984); Thomas B. Clark III, M.D. (South Carolina, 1983); Craig E. Elson, M.D. (Michigan, 1983); Roy Frye, M.D., Ph.D. (Michigan, 1985); James Furlong, M.D. (Michigan, 1981); Linda D. Glaubitz, M.D. (Duke, 1982); Randall Harris, M.D. (Nebraska, 1983), Ph.D. (North Carolina State University, 1974); David Howell, M.D. (Duke, 1984), Ph.D. (Duke, 1982); Robert Kinney, M.D. (Duke, 1981); Janet Kolbeck, M.D. (Emory, 1982); Miriam Latker, M.D. (George Washington, 1985); Kevin McCormack, M.D. (Michigan, 1983), Ph.D. (Michigan, 1979); Sara B. McEwen, M.D. (Tulane, 1983); Roger McLendon, M.D. (Med. Coll. of Georgia, 1982); Kathy Merritt, M.D. (Duke, 1985); Phillip Ruiz, Jr., M.D. (George Washington, 1985), Ph.D. (Florida, 1981); Mark W. Scroggs, M.D. (Duke, 1984); Robert F. Spurney, M.D. (Ohio, 1983); Stephanie Wain, M.D. (Duke, 1982).

Fellows: Mitchel Bauman, M.D. (Nebraska, 1982); Susan Beck-Davis, M.D. (Duke, 1984); Peter Humphrey, M.D., Ph.D. (Kansas, 1983, 1984); Steve Gonias, M.D., Ph.D. (Duke, 1984); Peter Kolbeck, M.D. (Emory, 1982); Marsha Lucas, M.D., Ph.D. (Duke, 1984).

Pediatrics

Chief Resident: Virgil Steele, Ph.D. (Washington, 1979), M.D. (South Carolina, 1983).

Third Year Residents: Jan Broadbent, M.D. (Utah, 1983); Kim Haltiwanger, M.D. (North Carolina at Chapel Hill, 1983); Peter Kinnebrew, M.D. (Alabama, 1983); Donald Ludlow, M.D. (Hahnemann, 1983); Rajesh Malik, M.D. (Sheffield, England, 1981); Elena Marin, M.D. (Boston, 1983); Charles Morrow, M.D. (Missouri, 1983); Randa Reitman, M.D. (Brown, 1983); Lynn Sheets, M.D. (Kansas, 1983); Karen St. Claire, M.D. (Texas at Galveston, 1982); Kathryn Thrailkill, M.D. (Ohio, 1983).

Second Year Residents: Raymond Chan, M.D. (New York at Buffalo, 1984); Ronald Dahl, M.D. (Pittsburgh, 1984); Eugene Freid, M.D. (Chicago, 1984); Carla Jacobson, M.D. (Connecticut, 1984); Fred Kern, M.D. (McGill, 1984); Nicholas Lynn, M.D. (Ohio State, 1984); Adrian Sandler, M.D. (Cambridge, England, 1984); Rashmin Savani, M.B.Ch.B. (Sheffield, England, 1982); Stephen Savarino, M.P.H. (Harvard, 1983), M.D. (Boston, 1984); Laura Schanberg, M.D. (Duke, 1984); Gregg Semenza, M.D., Ph.D. (Pennsylvania, 1984); Monica Shelton, M.D. (North Carolina at Chapel Hill, 1984); Katherine Turlington, M.D. (South Florida, 1984).

First Year Residents: Nola Attaway, M.D. (Texas at Galveston, 1985); Athos Bousvaros, M.D. (Duke, 1985); Paul Cheng, M.D. (National Taiwan Univ., 1979), Ph.D. (Pennsylvania, 1985); Barbara Deuell, M.D. (New York at Buffalo, 1985); Ira Dunkel, M.D. (Duke, 1985); Kimberly Dunsmore, M.D. (Wisconsin, 1985); Dorothy Eisenberg, M.D. (Duke, 1985); Richard England, M.D. (Indiana, 1985); Karen Farizo, M.D. (Louisiana, 1985); Ramsay Fuleihan, M.D. (Amer. Univ. of Beirut, 1985); D. Egl Rabinovich, M.D. (Southern Illinois, 1985); Tanya Trippett, M.D. (Duke, 1985); John Wassenaar, M.D. (Florida, 1985).

Fellows: I. H. Bangash, M.B.B.S. (Khyber, Pakistan, 1974); Sara Chafee, M.D. (Dartmouth, 1980); Robert Drucker, M.D. (Duke, 1979); William L. Ebberling, M.D. (Bowman Gray, 1974); John Eckerd, M.D. (Bowman Gray, 1969); Stephen Epps, M.D. (South Florida, 1979); Martha E. Gagliano, M.D. (Duke, 1982); Ricki Goldstein, M.D. (Cornell, 1981); Ilana Harmon, M.D. (Hadassah, Israel, 1975); James W. Hayes, M.D. (South Carolina, 1969); John Holtkamp, M.D. (New York Univ., 1980); David A. Horowitz, M.D. (New York, 1980); Elizabeth Kelley, M.D. (Indiana, 1976); Louise Markert, M.D., Ph.D. (Duke, 1982); Alton L. Melton, M.D. (North Carolina at Chapel Hill, 1982); Salman Mroueh, M.D. (American Univ. of Beirut, 1982); Michael O'Shea, M.D. (North Carolina at Chapel Hill, 1980); Deborah Plumb, M.D. (Virginia, 1981); Kapil Rawal, M.D. (Armed Forces Med. Coll., Poona, India, 1976); Joseph Roberts, M.D. (Emory, 1981); Carolyn Seymore, M.D. (Med. Coll. of Georgia, 1981); Jeffrey Snedeker, M.D. (Wisconsin, 1982); Kimo Stine, M.D. (Kansas, 1982); Larry Williams, M.D. (Duke, 1977).

Psychiatry

Chief Residents: Diana Antonacci, M.D. (Southern Illinois, 1982); Keith Meador, M.D. (Louisville, 1982); Bruce Noll, M.D. (Temple, 1982); Krishnaiah Rayasam, M.D. (Andhra Medical College, 1973); Floyd Wiseman, M.D. (Texas at Houston, 1982).

Residents: Linwood Allsbrook, M.D. (Kentucky, 1981); Carl Anderson, M.D. (Cornell, 1983); James Anderson, M.D. (Oral Roberts, 1984); Abdallah Askar, M.D. (Mansouri School of Medicine, Egypt, 1970); David Bierman, M.D. (Southern Illinois, 1978); Joseph Burt, M.D. (Michigan, 1983); Phillip Chappell, M.D. (North Carolina at Chapel Hill, 1984); Caron Christison, M.D. (California at San Diego, 1982); Terry Clarke, M.D. (Case Western Reserve, 1985); Scott Cunningham, M.D. (Duke, 1981); Martha Davidson, M.D. (Virginia 1985); Lawrence Dunn, M.D. (Michigan, 1984); Edward Eisenberg, M.D. (Univ. of Miami, 1982); Marc Feldman, M.D. (Dartmouth, 1984); Steven Feldman, M.D. (Duke, 1985); Gary Fiegel, M.D. (St. Louis, 1985); Stephen Ford, M.D. (East Tennessee, 1984); Veerainder Goli, M.D. (Osmania Med. Coll., 1978); Thomas Gresalfi, M.D. (Columbia, 1983); Grant Halischuk, M.D. (McGill, 1983); Caroline Haynes, M.D. (Duke, 1983); Charles Hofbauer, M.D. (Wayne State, 1980); Graham Hoffman, M.D. (Case Western Reserve, 1983); D. Randall Johnson, M.D. (South Carolina, 1983); Lakshmi Kamaraju, M.D. (Andhra Medical College, India, 1976); Pem Kahler, M.D. (North Carolina at Chapel Hill, 1980); Kalavathi Kollapa, M.D. (Mandurai Med. Coll., 1979); Lu Ann

Leidy, M.D. (Duke, 1982); Jothika Maneppali, M.D. (Kakatiya Medical College, India, 1978); Michael Marchese, M.D. (Columbia, 1982); Louis Monty, M.D. (Sackler School of Medicine, Tel Aviv, Israel, 1985); Jan Neal Cools, M.D. (Duke, 1982); Merry Noel, M.D. (Tennessee, 1983); Mindy Oshrain, M.D. (Duke, 1982); Tom Owens, M.D. (Louisiana, 1985); James Parker, M.D. (Alabama, 1985); Larry Pastor, M.D. (Jefferson, 1984); Roger S. Perilstein, M.D. (Temple, 1982); Dennis Porter, M.D. (North Carolina at Chapel Hill, 1982); James Pryor, M.D. (South Carolina, 1985); Magdalena Raczowska, M.D., Ph.D. (Warsaw Medical College, 1976); Frank Shelp, M.D. (Med. Coll. of Virginia, 1984); Margaret Ann Shugart, M.D. (Med. Coll. of Virginia, 1984); Mark Smith, M.D. (California at San Diego, 1984); Nathan Strahl, M.D. (North Carolina at Chapel Hill, 1983); David Susco, M.D. (Pennsylvania, 1983); Sam Thielman, M.D. (Duke, 1980); Anne Tyson, M.D. (North Carolina at Chapel Hill, 1981); Katherine Wu, M.D. (Duke, 1982); James Zakris, M.D. (Louisiana, 1983).

Radiology

Residents: Mitchell Anscher, M.D. (Virginia, 1981); Frank Berkowitz, M.D. (New York, 1983); Linda Brown, M.D. (California at San Diego, 1984); Arthur Castagno, M.D. (Pennsylvania, 1980); Timothy Clark, M.D. (Duke, 1981); W. Kent Davis, M.D. (North Carolina at Chapel Hill, 1984); John Donnal, M.D. (Virginia, 1983); Diane Edge, M.D. (Dartmouth, 1982); David Enterline, M.D. (North Carolina at Chapel Hill, 1982); Mark Finkel, M.D. (Albert Einstein, 1983); Evan Fram, M.D. (Duke, 1982); William Gallmann III, M.D. (Tulane, 1980); George Gamba, M.D. (Indiana, 1982); Janet Garrett, M.D. (Cornell, 1983); Steven Jenkins, M.D. (Columbia, 1980); Bruce Hershatter, M.D. (Tulane, 1984); Bennett Hollenberg, M.D. (Indiana, 1981); Helen Hyman, M.D. (South Carolina, 1984); Peter Janick, M.D. (Duke, 1982); Carlton Jenkins, M.D. (North Carolina at Chapel Hill, 1983); Ruben Kier, M.D. (Duke, 1982); Andrew Ku, M.D. (Columbia, 1984); Philip Marino, M.D. (Duke, 1983); Philip Moeser, M.D. (Wisconsin, 1980); Ronald Newbold, M.D. (Utah, 1984); Mark Osborne, M.D. (Chicago, 1981); Bruce Phillips, M.D. (Florida, 1983); Rita Pink, M.D. (Illinois, 1978); Charles Pope, M.D. (North Carolina at Chapel Hill, 1976); Claire Poyet, M.D. (Duke, 1981); Matthew Ralston, M.D. (Duke, 1981); Richard Satre, M.D. (Wisconsin, 1982); Peter Saviteer, M.D. (Connecticut, 1980); Michael Shanks, M.D. (Michigan, 1983); Mary Swain, M.D. (Duke, 1984); Julie Takasugi, M.D. (California at Los Angeles, 1982); David Tamas, M.D. (Georgia, 1982); Charles Thomas, M.D. (North Carolina at Chapel Hill, 1970); John Thompson, M.D. (Duke, 1984); Harlan Vingan, M.D. (New York, Downstate, 1983); Connie Vail, M.D. (Utah, 1984); M. David Wiener, M.D. (New York, 1984); William Woodruff, M.D. (Duke, 1982); Robert Yankes, M.D. (Pittsburgh, 1982); Charles Yeager, M.D. (Alabama, 1974).

Surgery

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Research Fellows: Mark Bladergroen, M.D. (Virginia, 1979); Bert A. Bowers, M.D. (Iowa, 1982); William C. Buhrman, M.D. (Duke, 1983); Louis A. Brunsting, M.D. (California at San Diego, 1983); Niall Buckley, M.B., B.Ch. (University College, Dublin, 1979); Thomas D. Christopher, M.D. (Duke, 1982); Robin G. Cummings, M.D. (Duke, 1982); James W. Gaynor, M.D. (South Carolina, 1982); Jacques P. Goldstein, M.D. (Univ. of Brussels, 1978); Kamal M. F. Itani, M.D. (American Univ. of Beirut, 1985); Stuart J. Knechtle, M.D. (Cornell, 1982); S. Chace Lottich, M.D. (Duke, 1981); H. Kim Lyerly, M.D. (California, 1983); George W. Maier, M.D. (Duke, 1982); Raymond G. Makhoul, M.D. (Chicago, 1982); Charles E. Murphy, M.D. (Duke, 1982); Robert C. Orchard, M.D. (Univ. of Saskatchewan, 1972); Hisao Oyama, M.D. (Nippon Medical School, Japan, 1977); David Salter, M.D. (Univ. of Toronto, 1974); Raymond Silva, M.D. (California, 1979); Hanna Szwed, M.D., Ph.D. (Medical Academy of Warsaw, 1980); Hiroshi Takei, M.D. (Nippon Med. School, 1977); Christopher R. Watters, M.D. (Michigan, 1983).

Senior Assistant Residents: Ralph J. Damiano, M.D. (Duke, 1980); James M. Douglas, Jr., M.D. (Duke, 1978); Thomas B. Ferguson, M.D. (St. Louis, 1979); Richard D. Floyd, M.D. (Duke, 1978); Donald Glower, M.D. (Johns Hopkins, 1980); Warren J. Kortz, M.D. (Colorado, 1979); John F. Lucas III, M.D. (Duke, 1981); David M. Mahvi, M.D. (South Carolina, 1981); James J. Morris, M.D. (Duke, 1982); Richard J. Peterson, M.D. (Mayo, 1979); Douglas S. Reintgen, M.D. (Duke, 1979); Laurence H. Ross, M.D. (Case Western Reserve, 1979); Francis S. Rotolo, M.D. (Michigan, 1981); John A. Spratt, M.D. (Washington Univ., 1980); George S. Tyson, Jr., M.D. (Duke, 1977); Walter B. Vernon, M.D. (Harvard, 1980).

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Angeles, 1984); Robert C. Harland, M.D. (Duke, 1983); David H. Harpole, M.D. (Virginia, 1984); Thomas E. Jordan, M.D. (Maryland, 1984); Martin E. Kernberg, M.D. (Stanford, 1984); Tally E. Lassiter, Jr., M.D. (Harvard, 1982); William J. Mallon, M.D. (Duke, 1984); David H. McCord, M.D. (Cornell, 1984); Michael J. McNamara, M.D. (Duke, 1984); William J. Murzic, M.D. (Tufts, 1984); Christopher E. Newman, M.D. (Bowman Gray, 1984); Michael A. Skinner, M.D. (Rush, 1984); Craig L. Slingluff, Jr., M.D. (Virginia, 1984); Thomas C. Spangler, M.D. (North Carolina at Chapel Hill, 1984); Mario Turi, M.D. (North Carolina at Greenville, 1984); Douglas J. Wermuth, M.D. (Wisconsin, 1984).

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Assistant Residents: Eben Alexander III, M.D. (Duke, 1980); Estrado Bernard, M.D. (Duke, 1983); Peter Bronec, M.D. (Duke, 1981); Amr O. El-Naggar, M.D. (Ain Shams Univ. Hosp., Egypt, 1978); Herbert E. Fuchs, M.D. (Duke, 1984); Charles E. Rawlings, M.D. (Duke, 1982); Steven J. Schiff, M.D. (Duke, 1980); Eric D. Weber, M.D. (S.U.N.Y., 1981); Richard B. Williams, M.D. (Stanford, 1984).

DIVISION OF ORAL SURGERY

Instructor and Chief Resident: Thomas R. Cook, D.M.D. (Med. Coll. of Georgia, 1977).

Assistant Residents: Dale R. Duncan, D.D.S. (Emory, 1984); Clive B. Rayner, D.M.D. (Florida, 1981).

DIVISION OF ORTHOPAEDIC SURGERY

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Assistant Residents: George S. Aitken, M.D. (Case Western Reserve, 1982); Michael J. Bolesta, M.D. (Missouri, 1981); William D. Caffrey, Jr., M.D. (Duke, 1982); James C. Califf, M.D. (Duke, 1981); Clinton B. Davis II, M.D. (Duke, 1981); Daniel M. Estok II, M.D. (Miami, 1983); Thomas J. Fischer, M.D. (Indiana, 1979); H. John Gerhard, M.D. (Harvard, 1981); Reginald L. Hall, M.D. (Duke, 1983); Michael W. Hendricks, M.D. (Florida, 1981); Patricia Howson, M.D. (McGill Univ., 1977); Leo A. Kulick, M.D. (Case Western Reserve, 1981); L. Scott Levin, M.D. (Temple, 1982); Robert W. Leyen, M.D. (Tennessee, 1977); Ralph A. Liebelt, M.D. (Case Western Reserve, 1982); Gary M. Lourie, M.D. (Duke, 1982); Jay D. Mabrey, M.D. (Cornell, 1981); Gregory A. Mencia, M.D. (Duke, 1981); Hugh B. Morris, M.D. (Duke, 1981); James E. Nitka, M.D. (Arizona, 1983); Robert M. Peroutka, M.D. (Maryland, 1982); Gary B. Schwartz, M.D. (New York Univ., 1980); Andrew R. Scott, M.D. (Kansas, 1983); David C. Urquia, M.D. (Virginia, 1983); William G. Ward, M.D. (Duke, 1978); Eddie J. Whelan III, M.D. (Georgia, 1980); Joseph H. Wombwell, M.D. (Kentucky, 1980); Mark C. Yates, M.D. (Missouri, 1982).

Research Fellows: James B. Billys, M.D. (Jefferson, 1981); Pantelis Nicolaou, M.D. (Athens Univ., 1975); John R. Reasoner, Jr., M.D. (Brown, 1980).

DIVISION OF OTOLARYNGOLOGY

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Assistant Residents: Robert A. Akins, M.D. (Arkansas, 1982); James C. Martin, M.D. (Louisiana, 1982); Chester P. Rollins, M.D. (Med. Coll. of Georgia, 1983); Joseph D. Siefker, M.D. (Louisiana, 1983); Keith D. Walvoord, M.D. (Texas Southwestern, 1982); Daniel Whitley, Jr., M.D. (North Carolina at Chapel Hill, 1983).

Research Fellow: Cameron Gillesie, M.D. (Virginia, 1974).

DIVISION OF PLASTIC AND MAXILLOFACIAL SURGERY

Instructors and Chief Residents: Donald Hanna, M.D. (Wayne State, 1979); Richard Radocha, M.D. (Hahnemann, 1979); Gregory Ruff, M.D. (Michigan, 1978).

Assistant Residents: Richard E. Coin, M.D. (Eastern Virginia, 1979); Michael S. Flood, M.D. (Univ. of Bologna, Italy, 1979); Linda C. Huang, M.D. (Stanford, 1979); Scott Jenkins, M.D. (Minnesota, 1980); Dean Kleto, M.D. (Tennessee at Memphis, 1979).

DIVISION OF UROLOGIC SURGERY

Instructors and Chief Residents: Robert A. Bertram, M.D. (Kentucky, 1980); Michael W. Brown, M.D. (Northwestern, 1980); John A. Nesbitt II, M.D. (Louisville, 1980).

Assistant Residents: Rudy T. Andriani, M.D. (New York Med. Coll., 1981); Stephen D. Campenella, M.D. (Jefferson, 1981); John E. Danneberger, M.D. (Pittsburgh, 1982); Robert P. Fleischer, M.D. (Duke, 1982); Michael I. Maggio, M.D. (Loyola, 1982); Robert D. Mino, M.D. (Georgetown, 1981); Mark R. Susskind, M.D. (Duke, 1982); Kendall L. Wise, M.D. (Vandervilt, 1982); Bruce E. Woodworth, M.D. (East Tennessee, 1983).

Research Fellow: Nancy A. Little, M.D. (Jefferson, 1983).



Class of 1986

Aldrich, Harry R. (Princeton), Flushing, New York
 Alexander, George Eric (Duke), Durham, North Carolina
 Alster, Tina S. (Duke), Durham, North Carolina
 Amidon, Thomas A. (Duke), Advance, North Carolina
 Barton, John W. III (Duke), Rocky River, Ohio
 Basuk, William L. (Cornell), Gloversville, New York
 Baum, Linda G. (Stanford), Shaker Heights, Ohio
 Bernhardt, Peter F. (Massachusetts Inst. of Technology), Dedham, Massachusetts
 Bolick, David R. (Brigham Young), Provo, Utah
 Branum, Gene D. (Austin), Tyler, Texas
 Burke, Deborah M. (Florida), Durham, North Carolina
 Buse, John B. (Dartmouth), Charleston, South Carolina
 Carle, Kenneth A. (Hobart), Geneva, New York
 Chen, Allen R. S. (Dartmouth), Lexington, Massachusetts
 Chen, Anthony L. (Michigan), Ann Arbor, Michigan
 Coles, Neavelle A., Jr. (Johns Hopkins), Lanham, Maryland
 Collier, Thomas F. (Cornell), Closter, New Jersey
 Craig, Kendra A. (Michigan), Anchorage, Alaska
 Crowell, Bradford A., Jr. (Pennsylvania), Hollywood, Florida
 Darwin, Robert H. (Duke), Plainfield, New Jersey
 DeWeese, Gary K. (Duke), Graham, North Carolina
 Dorman, Bruce H., Jr. (Duke), Durham, North Carolina
 Drapkin, Meredith (Duke), Riverdale, New York
 Dresser, Michael (Duke), Davidson, North Carolina
 Drexler, Karen Glaze (Georgia Instit. of Tech.), Doraville, Georgia
 Duffy, Patrick (United States Military Academy), Hampton, Virginia
 Ellenby, Martin I. (Illinois), Skokie, Illinois
 Fabian, Michael A. (Hamilton), Vestal, New York
 Fawcett, Thomas A. (Massachusetts Inst. of Technology), Wrightsville Beach, North Carolina
 Feldman, Steven R. (Chicago), Silver Spring, Maryland
 Feldmesser, Marta L. (Radcliffe), Woodmere, New York
 Fisher, Bret L. (Duke), Winter Park, Florida
 Forsberg, David A. (Princeton), Wyckoff, New Jersey
 Fowler, Walter E. (Duke), Durham, North Carolina
 Freye, Christopher J. (Duke), Stonington, Connecticut
 Fritz, Russell C. (Duke), Clark, New Jersey
 Frush, Karen Hamilton (Pittsburgh), Beaver Falls, Pennsylvania
 Furr, William S. (North Carolina State), Mint Hill, North Carolina
 Gates, Lawrence K., Jr. (Utah State), Logan, Utah
 Gilbertson, John R. II (Massachusetts Instit. of Tech.), Lynnfield, Massachusetts
 Givens, Kerry T. (Bucknell), Harrisburg, Pennsylvania
 Glasson, Sandra E. (Virginia), Charlottesville, Virginia
 Gore, Margaret (Harvard), Birmingham, Alabama
 Grady, Tana A. (Howard), Teaneck, New Jersey
 Green, Richard M. (Duke), Flossmoor, Illinois
 Haleem, Azeem S. (Duke), London, Ohio
 Harvill, Paul G. (Texas A. & M.), Garland, Texas
 Haverly, Karen Prifty (Duke), Naugatuck, Connecticut
 Hern, Deborah S. (Franklin and Marshall), Lancaster, Pennsylvania
 Hill, Joseph A., Jr. (Wake Forest), Burlington, North Carolina
 Hillman, David S. (Yale), Columbus, Ohio
 Hosford, Sandra Burson (Agnes Scott), Carrollton, Georgia
 Hovis, John G. (Duke), Cary, North Carolina
 Howard, Joseph F. (Duke), Rockville, Maryland
 Howell, Scott T. (Washington and Lee), Chester, Virginia
 Hoyt, David J. (Fairfield), Stratford, Connecticut
 Hulka, Carol A. (Brown), Chapel Hill, North Carolina
 Johnson, Janice D. (Loyola), Upper Marlboro, Maryland
 Johnson, Michael E. (Brigham Young), Mesa, Arizona
 Johnson, Scott H. (Emory), St. Louis, Missouri
 Jokerst, Elizabeth Sumner (Duke), Concord, North Carolina
 Kallianos, John A. (North Carolina at Chapel Hill), Clyde, North Carolina
 Kerr, Lindsey U. (Duke), Brookline, Massachusetts
 Kleiner, Jillian (Amherst), Larchmont, New York
 Koenig, Daniel W. (Duke), Potomac, Maryland

Kubek, Robert J. (Miami), Cleveland, Ohio
 Lambert, Thomas L. (Brigham Young), Fairfax, Virginia
 Lebovitz, Daniel J. (Washington), Durham, North Carolina
 Lindegren, Mary Lou (Duke), Riverside, Connecticut
 Long, Joseph B. (Duke), Kingsport, Tennessee
 Lyon, Robert K. (Duke), Westfield, New Jersey
 Martin, Barbara (Duke), Cary, Illinois
 McAdams, Holman P. (North Carolina State), Greensboro, North Carolina
 McGough, James J. (Gettysburg), Durham, North Carolina
 Merritt, Kathy A. (Duke), Durham, North Carolina
 Mills, Anthony M. (Duke), Columbia, South Carolina
 Minor, Robert L., Jr. (Duke), Rocky Mount, North Carolina
 Morgan, Bruce K. (Duke), Raleigh, North Carolina
 Nelson, Stanley F. (Michigan), Englewood, Colorado
 Ping, Andrew C. (Brown), Athens, Ohio
 Preiss, Jennifer E. (California at Berkeley), Davis, California
 Raskauskas, Paul A. (Harvard), South Boston, Massachusetts
 Reiner, Steven L. (Haverford), Utica, New York
 Reynolds, Pamela Preston (Duke), Akron, Ohio
 Roberts, Kathleen T. (Georgia), Columbus, Georgia
 Rosemond, Richard L. (Duke), Sanford, Florida
 Ruh, Jennifer M. (Dartmouth), Orchard Park, New York
 Sheffield, Cedric D. (Florida State), DeFuniak Springs, Florida
 Sidhu, Navjeet K. (Wellesley), Winston Salem, North Carolina
 Silver, Jon M. (Duke), Plantation, Florida
 Singh, Jasjit (Radcliffe), Brookville, New York
 Sjaarda, Raymond N. (Michigan), Marshall, Michigan
 Smith, Michael A. (North Carolina at Charlotte), Charlotte, North Carolina
 Sommers, Jefferson M. (North Carolina at Chapel Hill), Fayetteville, North Carolina
 Spach, David H. (Virginia), Durham, North Carolina
 Stacy, George P., Jr. (Purdue), Prospect, Kentucky
 Sugarman, Jeremy (Duke), Paramus, New Jersey
 Sutherland, Frederick S. (East Tennessee State), Johnson City, Tennessee
 Sutphin, Loretta G. (Wake Forest), Walnut Cove, North Carolina
 Szabo, Eva (Yale), Merrick, New York
 Taylor, Christina C. (California at Los Angeles), Corvallis, Oregon
 Treseler, Patrick A. (Seattle), Seattle, Washington
 Troutman, James L. (Davidson), Moorestown, New Jersey
 Van Vickle, Jennifer (Chicago), Durham, North Carolina
 Vilasi, Vincent J. (Pennsylvania), Dix Hills, New York
 Welty-Wolf, Karen E. (Davidson), St. Petersburg, Florida
 Whitney, Winston S. (Bowdoin), Cape Elizabeth, Maine
 Williams, Carmen J. (Duke), Poughkeepsie, New York
 Williams, Richard F., Jr. (North Carolina at Chapel Hill), Beulaville, North Carolina
 Wilson, Deborah Y. L. (Drake), Chicago, Illinois
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 Youngblood, Martha M. (Duke), Springfield, Virginia

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Allf, Bryan Ewing (Duke), Cincinnati, Ohio
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 Belkin, Beth M. (Duke), Jericho, New York
 Bird, Lynne M. (Bucknell), Muncy, Pennsylvania
 Blow, Osbert (Columbia), New York, New York
 Bone, Samuel N., III (Duke), Atlanta, Georgia
 Bonner, Marian E. (Wellesley), Hampton, Virginia
 Boyle, Jodell J. (Pomona), Fullerton, California
 Bremner, James D. (Puget Sound), Olympia, Washington
 Broadbent, Kenneth (Utah), Salt Lake City, Utah
 Butterly, David W. (Missouri-Columbia), St. Louis, Missouri
 Cain, John M. (Davidson), Winter Park, Florida
 Carr, David R. (Davidson), Clinton, North Carolina
 Chandler, Mary (California State-Dominguez Hills), Torrance, California

Cheng, Margaret S. (Harvard), Tustin, California
 Chrysson, Nick G., Jr. (Duke), Winston-Salem, North Carolina
 Cohen, Oren J. (Brandeis), Silver Spring, Maryland
 Constantine, Jeffrey M. (Duke), Jacksonville, Florida
 Cooke, David W. (Massachusetts Inst. of Tech.), Upper Saddle River, New Jersey
 Cooper, Randolph A. (Virginia), Arlington, Virginia
 Coundouriotis, Andrew (Duke), Washington, D.C.
 Crone, Wilson (Duke), Charlston, South Carolina
 Cumbee, Sharon R. (Wake Forest), Wake Forest, North Carolina
 Dang-Vu, Anh P. (Bryn Mawr), Alexandria, Virginia
 Darling, Thomas N. (Houghton), Rochester, New York
 Darrow, David (Amherst), Rego Park, New York
 Darwin, Beverly Sumner (Duke), Concord, North Carolina
 Digel, Mary C. (Delaware), Wilmington, Delaware
 Dimick, Richard N. (Duke), Birmingham, Alabama
 Dyke, Cornelius M. (Duke), Redlands, California
 Eaton, Alexander M. (Duke), New York, New York
 Frazier, David W. (Duke), Roanoke Rapids, North Carolina
 Friedberg, Richard C. (Stanford), Longboat Key, Florida
 Gall, Stanley A., Jr. (Duke), Durham, North Carolina
 Galumbeck, Matthew A. (William and Mary), Virginia Beach, Virginia
 Gartrell, Douglas M. (Oregon State), Lake Oswego, Oregon
 Gellman, Randy L. (Northwestern), Mooresville, North Carolina
 Gelman, Jack J. (Swarthmore), Newton Square, Pennsylvania
 Gibson, James B. (California at Davis), San Francisco, California
 Gingrich, Jay A. (Kansas), Fairway, Kansas
 Glover, Gregory J. (Harvard), Blythewood, South Carolina
 Gorelick, Marc H. (Princeton), East Northport, New York
 Graff, Jonathan M. (Miami, Ohio), Xenia, Ohio
 Haggard, Aneysa (Rice), Vienna, Virginia
 Harris, Linda D. (Virginia), Springfield, Virginia
 Hartsock, Langdon A. (Davidson), Charlotte, North Carolina
 Hayden, Deborah M. (Dartmouth), Newton, Massachusetts
 Haynes, William L. (Duke), Millers Creek, North Carolina
 Heinz, Tad Reeve (Wesleyan), Chapel Hill, North Carolina
 Hjelmstad, Russell (Colorado), Englewood, Colorado
 Ho, Victor W. (Duke), Pineville, North Carolina
 Holliday, James Newton (Rice), Shelby, Tennessee
 Inguanzo, Joseph L. (Duke), Chamblee, Georgia
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 Kenan, Daniel J. (William and Mary), Durham, North Carolina
 Kim, Paul B. (Columbia), Silver Spring, Maryland
 Kirk, Allan D. (Old Dominion), Virginia Beach, Virginia
 Kohler, Matthew F. (Yale), Kohler, Wisconsin
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 Kreager, Julie (Brown), Naples, Florida
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 Li, Jennifer S. (Stanford), Indianapolis, Indiana
 Lobach, David H. (Bucknell), York, Pennsylvania
 Lurie, Scott N. (Duke), Baldwin, New York
 Madden, John F. (Amherst), New Britain, Connecticut
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 Marcus, Stuart (Rutgers), Fair Lawn, New Jersey
 Martin, Pamela H. (Princeton), Rego Park, New York
 McDonough, Robert S. (Texas), Bloomington, Minnesota
 Mennillo, Roger (Rhode Island), Warwick, Rhode Island
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 Miller, Ann E. (Stanford), Portland, Oregon
 Molter, David W. (Duke), Durham, North Carolina
 Montgomery, Robert B., Jr. (Dartmouth), Boise, Idaho
 Moskaluk, Christopher A. (Illinois), Midlothian, Illinois
 Nanda, Sumit (Rice), Oklahoma City, Oklahoma

Newcomb, Frederick L., Jr. (Duke), Charlotte, North Carolina
 Paramore, Christopher G. (Duke), Grimesland, North Carolina
 Parent, Leslie J. (Dartmouth), Charleroi, Pennsylvania
 Parlier, Reggie D. (Lenior-Rhyne), Maiden, North Carolina
 Patel, Dhavalkuma D. (Duke), Charlotte, North Carolina
 Payne, Paul A. (Kansas), Topeka, Kansas
 Persons, Derek A. (Duke), Gaffney, South Carolina
 Philpott, Caroline C. (Duke), Winston-Salem, North Carolina
 Platt, Kenneth P. (Pennsylvania), Allentown, Pennsylvania
 Purut, Cemil M. (North Carolina State), Charlotte, North Carolina
 Query, Charles C., Jr. (Duke), Kannapolis, North Carolina
 Rajagopalan, Shrinivas (Harvard), Durham, North Carolina
 Rehnke, Robert D. (South Florida), St. Petersburg, Florida
 Rider, Lisa G. (Duke), Basking Ridge, New Jersey
 Rippy, Lee S. (North Carolina at Chapel Hill), Dunn, North Carolina
 Robertson, Susan Markel (Colorado), Broomfield, Colorado
 Rosenberg, Mark R. (Duke), Gastonia, North Carolina
 Russell, William A., III (George Washington), Kensington, Maryland
 Safran, Marc (California at Berkeley), Los Angeles, California
 Schmidt, David M. (Northwestern), Cascade, Wisconsin
 Schoeffel, Annette C. (Duke), Woodcliff Lake, New Jersey
 Schumacher, Donald J. (Massachusetts Inst. of Tech.), Colts Neck, New Jersey
 Schwarz, James K. (Vanderbilt), Creve Coeur, Missouri
 Scialabba, Fred A. (Princeton), Plainfield, New Jersey
 Sell, Timothy L. (Harvard), Mocksville, North Carolina
 Shull, William H., Jr. (Dartmouth), Charlotte, North Carolina
 Silverstein, Leonard (Duke), Brooklyn, New York
 Slaughter, Thomas F. (Wake Forest), Kannapolis, North Carolina
 Spaulding, Cora D. (Stanford), Chicago, Illinois
 Stenzel, Timothy T. (Grinnell), New Hope, Minnesota
 Strohl, Durga (Pennsylvania), Piscataway, New Jersey
 Swaim, Mark W. (North Carolina at Greensboro), Kernersville, North Carolina
 Taylor-Albert, Elizabeth S. (Duke), Carmel, Indiana
 Tucker, Susan L. (Duke), Greenville, North Carolina
 Tweed, J. Lindsey (Dartmouth), San Francisco, California
 Uraizee, Ashfaq (Duke), Charlotte, North Carolina
 Vick, William W. (North Carolina at Chapel Hill), Chapel Hill, North Carolina
 Walker, Ann G. (Duke), New Brunswick, New Jersey
 Walsh, James P. (Mississippi), Montgomery, Alabama
 Walsh, Kim M. (Dartmouth), Monona, Wisconsin
 Wang, Henry Z. (Northwestern), Pittsburgh, Pennsylvania
 Warner, Deryl H. (Duke), Charlotte, North Carolina
 Wei, Maria L. (Michigan), Ann Arbor, Michigan
 Weingart, Jon D. (Duke), Akron, Ohio
 Weischedel, Garry (St. Lawrence), Camillus, New York
 Weiss, Eric (Davidson), St. Petersburg, Florida
 Whyte, Lynne Meador (California at Berkeley), Lafayette, California
 Wilkes, David C. (Columbia), Dresher, Pennsylvania
 Wilson, Douglas A. (Wheaton), Elm Grove, Wisconsin
 Wyatt, Richard M. (Washington), Calhan, California
 Yohay, Daniel (Union), New Hyde Park, New York
 Yoshino, Paul (Occidental), San Pedro, California

Class of 1988

Ahearn, Paul M. (Duke), McLean, Virginia
 Anderson, Ian C. (Stanford), Stanford, California
 Anderson, William D. (Duke), Durham, North Carolina
 Bates, Michael D. (Duke), Rochester, Michigan
 Behar, Marcy L. (Duke), Durham, North Carolina
 Bolster, David E. (North Carolina at Chapel Hill), Durham, North Carolina
 Bronstein, Seymour M. (Duke), Durham, North Carolina
 Bryce, Sarah S. (Yale), Philadelphia, Pennsylvania
 Budnick, Sydna G. (Brown), Clifton, New Jersey
 Bumgarner, John R. (Memphis State), Dallas, Texas
 Burk, Robert W., III (Virginia), Parkersburg, West Virginia
 Calle, Angela M. (Loyola), Phoenix, Maryland

Calton, William C., Jr. (Davidson), Charlotte, North Carolina
 Chen, Serena H. (Brown), Bryn Mawr, Pennsylvania
 Chow, Gregory H. (Johns Hopkins), Bridgewater, New Jersey
 Cook, Perry F. (Stanford and Duke), Raleigh, North Carolina
 Cox, Patricia M. (Fordham), Point Lookout, New York
 Cross, Pamela (Middlebury), Charlottesville, Virginia
 Crovitz, Deborah H. (Chicago), Durham, North Carolina
 Crownover, Brenda P. (Linfield), Bellevue, Washington
 Cullen, Joseph P. (Cornell), West Hartford, Connecticut
 Culton, Mark A. (Duke), Charlotte, North Carolina
 Doron, Mia Wechsler (Williams), Weston, Massachusetts
 Edmond, Roderick E. (Morehouse), Atlanta, Georgia
 Evans, Avery J. (Virginia) Virginia Beach, Virginia
 Fang, Jim C. T. (Duke), Tuscaloosa, Alabama
 Foster, Jill A. (Oberlin), Silver Spring, Maryland
 Frantz, Frazier W. (U.S. Naval Academy), Sicklerville, New Jersey
 Freeman, Bradley D. (Florida), Longwood, Florida
 Gemperli, Pia M. (Cornell), Pleasant Valley, New York
 Gephart, Christina M. (Virginia), Arlington, Virginia
 Go, Loewe O. (Duke), Quezon City, Philippines
 Goldberg, Marc A. (Duke), Brooklyn, New York
 Grossnickle, Mark E. (Duke), Greenville, North Carolina
 Haim, Kevin (Duke), Silver Spring, Maryland
 Hale, Laura P. (Michigan State), Durham, North Carolina
 Hall, Bruce L. (Princeton), Warminster, Pennsylvania
 Hoehner, Jeff C. (Idaho), Pocatello, Idaho
 Hoffman, Kristina M. (Loyola Marymount), Clearwater, Florida
 Hollett, Michael D. (Duke), Arlington Heights, Illinois
 Holmes, Jude, Jr. (North Carolina at Chapel Hill), Maple Hill, North Carolina
 Holway, Brent P. (Vanderbilt), Charlotte, North Carolina
 Hoock, Jennifer L. (Oberlin), Gary, Indiana
 Huang, Mary S. (Harvard/Radcliffe), Houghton, Michigan
 Hulka, Gregory F. (Northwestern), Chapel Hill, North Carolina
 Humayun, Mark S. (Georgetown), Potomac, Maryland
 Ibrahim, George K. (Davidson), Smithfield, North Carolina
 Jeffries, Jennifer J. (Virginia), Washington, D.C.
 Kaufman, Jeffrey (New York at Stony Brook), Plainview, New York
 King, Robert T., III (Duke), Hickory, North Carolina
 Kinsel, Laura B. (Washington), Richland, Washington
 Kinsman, James M. III (North Carolina at Chapel Hill), Louisville, Kentucky
 Koriwachak, Michael J. (Bucknell), McMurray, Pennsylvania
 Landay, Kimberly (Brown), Pittsburgh, Pennsylvania
 Ledair, Denise M. (Duke), Silver Spring, Maryland
 Lee, Joon S. (Dartmouth), Morganton, North Carolina
 LeMosy, Ellen K. (Florida), Orlando, Florida
 Lontkowski, Susan M. (Duke), Lafayette Hill, Pennsylvania
 Lyerly, Mark A. (North Carolina at Chapel Hill), Rockwell, North Carolina
 Lyster, Walker, IV (Davidson), Hickory, North Carolina
 Maki, Jeffrey H. (California at San Diego), Davis, California
 Mao, Lisa K. (Rice), Scottsdale, Arizona
 Markowitz, Jay S. (Columbia), Woodmere, New York
 Marrano, Neal N. (Brown), APO New York, New York
 Mask, William K. (North Carolina at Chapel Hill), Hamlet, North Carolina
 Maynor, Bobby R., Jr. (North Carolina at Chapel Hill), Pembroke, North Carolina
 McIntosh, Mark S. (Duke), Sanford, Florida
 McLoughlin, Thomas (Johns Hopkins), Tinton Falls, New Jersey
 McQuigg, Molly (Wooster), Delaware, Ohio
 Muly, Emil C. III (Johns Hopkins), Southport, Connecticut
 Obremskey, William (Duke), Lebanon, Indiana
 Oetting, Marguerite Henry (Duke), St. Louis, Missouri
 Ozaki, Charles K. (Duke), Lake City, Florida
 Panza, William S. (Johns Hopkins), Emerson, New Jersey
 Paul, Randal H. (Baylor) Lake Jackson, Texas
 Podolak, Michael J. (Duke), Kensington, Maryland
 Pollard, John B. (California at Berkeley), Carmel, California
 Poteat, Harry T. (Pomona), Paoli, Pennsylvania
 Powell, Allen O. (Massachusetts Instit. of Tech.), Wethersfield, Connecticut

Pressman, Eva K. (Brown), Bayside, New York
 Pyne, John I. B., Jr. (Dartmouth), Princeton, New Jersey
 Racine, Susan Murchison (Duke), Wilmington, North Carolina
 Rossitch, John C. (North Carolina at Chapel Hill), Winston-Salem, North Carolina
 Sater, Richard A. (Florida), Cocoa Beach, Florida
 Scarlett, Susan M. (Clemson), Hilton Head Island, South Carolina
 Schroering, Edward S., Jr. (Duke), Louisville, Kentucky
 Segreti, Eileen M. (Pennsylvania), Bethesda, Maryland
 Simeone, Diane M. (Brown), North Kingstown, Rhode Island
 Simmons, Rache M. (Duke), Matthews, North Carolina
 Skapek, Stephen X. (Duke), Shaker Heights, Ohio
 Smith, Bryan W. (North Carolina at Chapel Hill), New Bern, North Carolina
 Stasheff, Steven F. (North Carolina at Chapel Hill), Raleigh, North Carolina
 Sternbergh, W. Charles, III (Brown), Chattanooga, Tennessee
 Stinson, Michael S. (North Carolina at Greensboro), Greensboro, North Carolina
 Stone, Lisa M. (Pomona), Phoenix, Arizona
 Straznickas, John R. (Illinois), Rockford, Illinois
 Sukin, Craig A. (Dartmouth), Billings, Montana
 Swearingin, Dennis R. (Davidson), Statesville, North Carolina
 Talbott, Gregory A. (North Carolina at Chapel Hill), Concord, North Carolina
 Tedder, Mark (North Carolina State), Greensboro, North Carolina
 Terris, David (Cornell), Upper Saddle River, New Jersey
 Tope, Whitney D. (Duke), Decatur, Georgia
 Truett, Artis P., III (Georgia Inst. of Tech.), Vidalia, Georgia
 Tyrey, Scott J. (Duke), Durham, North Carolina
 Vance, Charles R. (Princeton), Birmingham, Alabama
 Van Hoesen, Karen B. (California at Davis), Orinda, California
 Wang, Clark J. (Duke), Ann Arbor, Michigan
 Weck, Karen E. (Duke), Great Falls, Virginia
 Wilson, Brett L. (Duke), Conway, South Carolina
 Wolff, Steven D. (Yale), Quincy, Massachusetts
 Yang, Syngil (Yale), Chappaqua, New York
 Zeidman, Seth M. (Duke), Cherry Hill, New Jersey

Class of 1989

Acker, Jeffrey C. (Dartmouth), Solon, Ohio
 Allen, Patti Jean (Colorado), Boulder, Colorado
 Alyea, Edwin P. III (Duke), Georgetown, Kentucky
 Armstrong, Michael, Jr. (Princeton), Richmond, Virginia
 Barbano, Edward F., Jr. (Duke), Kensington, Maryland
 Beatty, Peter T. (Harvard), Durham, North Carolina
 Becker, Kyra J. (Virginia Tech.), Red Lion, Pennsylvania
 Bond, Pamela E. (Hamilton), Massena, New York
 Book, Michael R. (Johns Hopkins), North Babylon, New York
 Brackett, Jeffrey C. (Duke), Athens, Georgia
 Brodeur, David (William and Mary), Brunswick, Maine
 Brown, Thomas M. (Kentucky), Lexington, Kentucky
 Bryant, Randall M. (Princeton), Newport, North Carolina
 Buser, Steven D. (Michigan), Lake Orion, Michigan
 Carpenter, Sarah A. (Stanford), Arvada, Colorado
 Cech, Alex C. (Yale), Bronxville, New York
 Chang, Carolyn H. (North Carolina at Chapel Hill), Fayetteville, North Carolina
 Chang, Steven C. (Tufts), Holden, Massachusetts
 Chow, Caroline C. (Duke), Alexandria, Virginia
 Collins, Bradley H. (Princeton), Greensboro, North Carolina
 Correa, Javier G. III (Campbell), Bellevue, Washington
 Crane, Charles M. (Stanford), Bellevue, Washington
 Culp, Susan L. (North Carolina at Chapel Hill), Charlotte, North Carolina
 Davidson, Robert C. (Virginia), Vienna, Virginia
 Davis, Cornelius A. (North Carolina at Chapel Hill), Winston-Salem, North Carolina
 Dockery, Stephen E. (Union), Greensboro, North Carolina
 Dontfrid, Franklyn (Connecticut), New Haven, Connecticut
 Dovey, Mark E. (Duke), Greensburg, Pennsylvania
 Earnhardt, Richard C. (North Carolina State), Millers Creek, North Carolina
 Edelberg, Jay M. (Columbia), Shaker Heights, Ohio
 Eshbaugh, Willis G., Jr. (Emory), Ft. Myers, Florida

Evans, Josephine Adamson (Duke), Norfolk, Virginia
 Faberowski, Nicholas (Duke), Pompano Beach, Florida
 Fairchild, Karen D. (Wellesley), Raleigh, North Carolina
 Farmer, Douglas G. (Duke), Charlotte, North Carolina
 Farmer, Roger W. (South Carolina), Anderson, South Carolina
 Farmer, Thomas H. R. (Duke), Durham, North Carolina
 Featherston, Mark W. (Duke), Charlotte, North Carolina
 Flanagan, Brian (Davidson), Lakeland, Florida
 Flick, Conrad L. (North Carolina State), Taylorsville, North Carolina
 Flyer, Jack L. (Cornell), Rockville, Maryland
 Forman, Mark S. (Yale), Great Neck, New York
 Gest, Kathleen L. (North Carolina at Chapel Hill), Dunwoody, Georgia
 Gordon, John D. (Princeton), Milton, Massachusetts
 Hammes, Stephen (Cornell), Ithaca, New York
 Harrell, Robert L. III (North Carolina at Chapel Hill), Baltimore City, Maryland
 Hendrickson, Steven C. (North Carolina at Chapel Hill), Danville, Virginia
 Heng, Michelle (Massachusetts Institute of Technology), Lincoln, Nebraska
 Hensley, Martee L. (Duke), Sebring, Florida
 Herlong, James R. (Davidson), Rock Hill, South Carolina
 Huff, Carolyn A. (Drury), St. James, Missouri
 Hyer, Randall N. (United States Naval Academy), Los Alamos, New Mexico
 Jablonover, Michael R. (Duke), Raleigh, North Carolina
 Jacobs, Alan R. (Duke), Wyckoff, New Jersey
 Jerome, Keith R. (Georgetown), Ashland, Kentucky
 Joines, Ronald W., Jr. (Duke), Cincinnati, Ohio
 Kaplan, Todd (New York at Stony Brook), Baldwin, New York
 Karegeannes, James C. (South Carolina), Spartanburg, South Carolina
 Keithahn, Stephen T. (Yale), Benson, Minnesota
 Kime, Robert C. III (Wheaton), Fairview Park, Ohio
 Koopersmith, Tina B. (Duke), Hewlett, New York
 Landon, Mark (California at San Diego), Greenville, North Carolina
 LeCroy, Charles M., Jr. (Duke), Lexington, North Carolina
 Lee, Su Kin (Bristol), Sandakan, Malaysia
 Lin, Janet C. (Harvard), Arcadia, California
 Maddox, Ricky P. (Erskine), Donalds, South Carolina
 Madwed, David S. (Duke), Easton, Connecticut
 Mast, Alan (Illinois), Urbana, Illinois
 Mavros, Sharon A. (Johns Hopkins), Bayville, New York
 Maxfield, Steven R. (Utah), Salt Lake City, Utah
 McDonnell, Kenneth P. (Notre Dame), Alexandria, Virginia
 McGinnis, Hirschel D. (Maryland), Lanham, Maryland
 Mody, Elinor A. (Duke), Potomac, Maryland
 Moore, Kenneth E. (Maryland), Rockville, Maryland
 Myers, Barry S. (Toronto), Toronto, Ontario, Canada
 Nastala, Chet L. (Harvard), Philadelphia, Pennsylvania
 Nathan, Lauren (Stanford), Palo Alto, California
 Ng, Kim K. (Cornell), Hillsborough, North Carolina
 Nichols, Kim E. (Dartmouth), Malden Bridge, New York
 Nicholson, John C. (North Carolina at Chapel Hill), Charlotte, North Carolina
 Odom, Angela D. (Dillard), Shreveport, Louisiana
 Owen, Clarence H. (Duke), Osprey, Florida
 Patton, Suzanne E. (Dartmouth), Moorestown, New Jersey
 Peters, Brandon M. (North Carolina at Chapel Hill), Elizabeth City, North Carolina
 Porter, Lisa E. (William and Mary), Springfield, Virginia
 Pracyk, John B. (Duke), Oak Brook, Illinois
 Riska, Paul F. (Cornell), Staten Island, New York
 Roberts, Joan T. (North Carolina at Greensboro), Greensboro, North Carolina
 Rosenberg, Mindy C. (Pennsylvania), Plantation, Florida
 Rubenstein, David S. (Princeton), Brooklyn, New York
 Russell, Mark W. (Cornell), Orchard Park, New York
 Savitt, Michael A. (Duke), West Allis, Wisconsin
 Schmaltz, Robert A. (Duke), Fairfield, Ohio
 Schuman, Robert W. (Pennsylvania), Merrick, New York
 Schwartz, Marc S. (Emory), Holmdel, New Jersey
 Shoup, Scott A. (Northwestern), Omaha, Nebraska
 Simons, Grant (Duke), Closter, New Jersey
 Skaryak, Lynne A. (North Carolina at Chapel Hill), Charlotte, North Carolina

Slep, Catherine C. (Princeton), Richmond, Virginia
 Smith, Matthew R. (Canisius), Lakeview, New York
 Smith, Spencer M. (Brigham Young), Mesa, Arizona
 Sparks, Jeffrey D. (Yale), Wallingford, Pennsylvania
 Stevens, William R. (North Carolina State), Raleigh, North Carolina
 Tarry, Wallace C. (Hampden-Sydney), Oxford, North Carolina
 Terrell, Grace E. (North Carolina at Chapel Hill), Siler City, North Carolina
 Thierjung, Christina (Princeton), Rye, New York
 Toscano, Joseph D. (Dartmouth), Merritt Island, Florida
 Tourian, Karen A. (St. John's), Durham, North Carolina
 Trachman, Jayne F. (Cornell), Brooklyn, New York
 Vandermeer, Emile (North Carolina at Chapel Hill), Clayton, North Carolina
 Ventimiglia, Joe B. (Dartmouth), Arlington, Texas
 Webb, Michael S. (Virginia), Norfolk, Virginia
 Zaroff, Wendy (Yale), Rochester, New York



Class of 1985 with Postgraduate Year One Appointments

- Adams, Carol Jean (Martinsville, Virginia) University of Utah, Salt Lake City, Utah—Obstetrics and Gynecology
- Alitz, Curtis J. (West Point, New York) Madigan Army Medical Center, Tacoma, Washington—Orthopaedic Surgery
- Allen, Cathy Michelle (Rocky Mount, North Carolina) No PGY-1
- Atwater-Boyd, Susan K. (Blue Bell, Pennsylvania) Duke University Medical Center, Durham, North Carolina—Pathology
- Bannister, Carolyn L. F. (Abbeville, South Carolina) Emory University, Atlanta, Georgia—Diabetology
- Barber, Virginia Neil Gibbons (Oak Ridge, Tennessee) University of Virginia, Charlottesville, Virginia—Obstetrics and Gynecology
- Beck-Davis, Susan Ruth (Durham, North Carolina) Duke University Medical Center, Durham, North Carolina—Pathology
- Bernstein, Roslyn J. (New York, New York) Duke University Medical Center, Durham, North Carolina—Internal Medicine
- Bobman, Stuart A. (Lafayette Hill, Pennsylvania) St. John's Mercy Medical Center, St. Louis, Missouri—Diagnostic Radiology
- Bousvaros, Athos (Slingerlands, New York) Duke University Medical Center, Durham, North Carolina—Pediatrics
- Bradford, Norman F. (Miami, Florida) North Carolina Baptist Hospital, Winston Salem, North Carolina—Anesthesiology
- Brown, Richard Alan (Atlanta, Georgia) University of California, San Diego, California—Orthopaedic Surgery
- Capps, John Lawton (Warrenton, North Carolina) Medical College of Virginia, Richmond, Virginia—Internal Medicine
- Caruso, Joseph M. (South Holland, Illinois) Memorial Hospital, South Bend, Indiana—Family Medicine
- Chancellor, Karen Elizabeth (Memphis, Tennessee) University of Kentucky, Lexington, Kentucky—Pathology
- Chaney, Kathy A. (Pittsburgh, Pennsylvania) Tulane University, New Orleans, Louisiana—Obstetrics and Gynecology
- Chung, Sophia M. (Silver Spring, Maryland) Baylor College Affiliates, Houston, Texas—Ophthalmology
- Cornwell, Sarah B. (Valdese, North Carolina) Duke University Medical Center, Durham, North Carolina—Family Practice
- Crowley, Nancy Jean (Minneapolis, Minnesota) Vanderbilt University, Nashville, Tennessee—Academic Medicine—General Surgery
- Daft, Paula Ann (Lafayette Hill, Pennsylvania) Johns Hopkins Hospital, Baltimore, Maryland—Pediatrics
- Deaton, David Hugo (Hickory, North Carolina) University of Pennsylvania, Philadelphia, Pennsylvania—General Surgery
- Dickinson, Daniel J. (Virginia Beach, Virginia) University of Vermont, Burlington, Vermont—Internal Medicine
- Doman, Kathleen A. (Asheboro, North Carolina) University of Pittsburgh, Pittsburgh, Pennsylvania—Internal Medicine
- Dranoff, Glenn (Woodmere, New York) Massachusetts General Hospital, Boston, Massachusetts—Hematology/Oncology
- Dunkel, Ira (Paramus, New Jersey) Duke University Medical Center, Durham, North Carolina—Pediatrics
- Ebeling, James Gerard (Baltimore, Maryland) Duke University Medical Center, Durham, North Carolina—Internal Medicine
- Eisenberg, Dorothy Baker (Durham, North Carolina) Duke University Medical Center, Durham, North Carolina—Pediatrics
- Enright, Katherine Anne (St. Joseph, Missouri) Duke University Medical Center, Durham, North Carolina—Internal Medicine
- Fearnow, Edgar Cecil, III (Lancaster, Pennsylvania) Newton-Wellesley Hospital, Newton, Massachusetts—Radiology
- Flanagan, William F. (Lakeland, Florida) Baylor Medical College, Houston, Texas—Urologic Surgery
- Friedman, Daniel B. (Albuquerque, New Mexico) University of Texas Affiliated, Dallas, Texas—Cardiology
- Frush, Donald P. (Los Gatos, California) University of California, San Francisco, California—Academic Pediatrics
- Fuchs, Herbert Edgar (Granada Hills, California) Duke University Medical Center, Durham, North Carolina—Neurosurgery
- Gray, John Lawrence (Lewisburg, Pennsylvania) University of California, San Francisco, California

—General Surgery

Greenfield, Ruth Ann (Durham, North Carolina) Duke University Medical Center, Durham, North Carolina—Internal Medicine

Gulevich, Steven J. (Palo Alto, California) University of Washington, Seattle, Washington—Neurology

Harbury, Olin Laurence (Etna, New Hampshire) Pacific Medical Center, San Francisco, California—Academic Radiology

Holcomb, Gerianne Geszler (Willoughby Hills, Ohio) Duke University Medical Center, Durham, North Carolina—Obstetrics and Gynecology

Huot, Stephen Joseph (Manchester, New Hampshire) Yale-New Haven Medical Center, New Haven, Connecticut—Academic Medicine/Nephrology

Jackson, Mark D. (Middleton, Wisconsin) University of Iowa, Iowa City, Iowa—Internal Medicine

Jenkins, Susan Eileen (Philadelphia, Pennsylvania) Duke University Medical Center, Durham, North Carolina—Obstetrics and Gynecology

Jones, Elizabeth Carol (Bethesda, Maryland) Boston University Affiliated Hospitals, Boston, Massachusetts—Radiology

Jones, Vincent Thomas (Minnesott Beach, North Carolina) David Grant Medical Center, Travis Air Force Base, California—Orthopaedic Surgery

Kabas, John Scott (Raleigh, North Carolina) Duke University Medical Center, Durham, North Carolina—Thoracic Surgery

Keppel, Kenneth Robert (Hickory, North Carolina) University Health Center of Pittsburgh, Pittsburgh, Pennsylvania—Pediatrics

Kiernan, David C. (Key Biscayne, Florida) Georgetown University, Washington, D.C.—General Surgery

King, Peter Herbruck (Canton, Ohio) Case Western Reserve University, Cleveland, Ohio—Neurology

Kipnis, Robert J. (Clayton, Missouri) Yale-New Haven Medical Center, New Haven, Connecticut—Internal Medicine

Kliwer, Mark Alan (Vienna, Virginia) Johns Hopkins, Baltimore, Maryland—Urology

Koch, F. Daniel (Phoenix, Arizona) University of Missouri, Columbia, Missouri—Orthopaedics

Kurilla, Michael Gregory (Trenton, New Jersey) Brigham and Women's Hospital, Boston, Massachusetts—Academic Medicine

Layton, Marcelle (Baltimore, Maryland) State University of New York, Upstate Medical Center, Syracuse, New York—Primary Care Medicine/Rural Health

Lehmann, Leslie Elaine (New Woodstock, New York) Massachusetts General Hospital, Boston, Massachusetts—Pediatric Surgery

Leonardy, Nicholas John (Atlanta, Georgia) Georgia Baptist Hospital, Atlanta, Georgia—Ophthalmology

Levine, Pamela Donna (Atlanta, Georgia) No PGY 1

Lewis, William Ralph, III (Carmel, California) University of California at Los Angeles/Harbor Medical Center, Torrance, California—Surgery

Louden, Mark Stuart (Parkersburg, West Virginia) Hershey Medical Center/Pennsylvania State University, Hershey, Pennsylvania—Medicine

Maroon, Thomas John, Jr. (Wheeling, West Virginia) Children's Hospital of Pittsburgh, Pittsburgh, Pennsylvania—Pediatrics

McFarland, Elizabeth Jane (Wauwatosa, Wisconsin) University of Colorado Health Sciences Center, Denver, Colorado—Pediatrics

Menick, Barry Jay (Rockville, Maryland) Graduate Hospital, Philadelphia, Pennsylvania—Radiology

Miller, Ann Calby (Westport, Connecticut) Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania—Internal Medicine

Mitchell, R. Brian (Columbus, Ohio) Johns Hopkins, Baltimore, Maryland—Academic Medicine—Hematology/Oncology

Murray, Michael James (Durham, North Carolina) Duke University Medical Center, Durham, North Carolina—Radiation Oncology

Mustoe, Thomas Allen (Covington, Virginia) Barnes Hospital, St. Louis, Missouri—Internal Medicine

Myers, Margaret Anne (Pittsburgh, Pennsylvania) Children's Hospital of Boston, Boston Massachusetts—Pediatrics

Newby, Stephanie Frances (Greensboro, North Carolina) Pacific Medical Center, San Francisco, California—Anesthesiology

Nichols, Joni C. (Rochester, New York) University of California, San Francisco, California—Internal Medicine

Nichols, Stephen Ross (Magnolia, Texas) No PGY-1

O'Donnell, Michael Alan (Alexandria, Virginia) Brigham and Women's Hospital, Boston, Massachusetts—Urology

Papanicolaou, Michael Nicholas (Lighthouse Point, Florida) University of California, Los Angeles, California—Cardiology

Paulson, Erik Karl (Columbus, Ohio) Duke University Medical Center, Durham, North

Carolina—Radiology

Perkins, Christopher M. (Kennebunkport, Maine) North Carolina Memorial Hospital, Chapel Hill, North Carolina—General Internal Medicine

Petruska, David B. (Wilmington, Delaware) Michael Reese Hospital, Chicago, Illinois—Emergency Medicine

Pharr, Walter Davidson (Greensboro, North Carolina) North Carolina Memorial Hospital, Chapel Hill, North Carolina—Dermatology

Pierce, Lori J. (Philadelphia, Pennsylvania) Thomas Jefferson University, Philadelphia, Pennsylvania—Radiation Oncology

Pomper, Mark Elliott (Wilmette, Illinois) University of Chicago, Chicago, Illinois—Neurosurgery

Porter, Kathleen Logan (Weston, Massachusetts) No PGY-1

Quinlivan, Evelyn Byrd (Powhatan, Virginia) North Carolina Memorial Hospital, Chapel Hill, North Carolina—Internal Medicine

Rabassa, Antonio E. (Miami, Florida) Vanderbilt University, Nashville, Tennessee—Orthopaedic Surgery

Reid, Steven Hunter (Salisbury, North Carolina) Medical Center of Virginia, Richmond, Virginia—Clinical Radiology

Reiser, Harvey James (Sarasota, Florida) University of Hawaii, Honolulu, Hawaii—Ophthalmology

Rossitch, Eugene, Jr. (Winston Salem, North Carolina) Duke University Medical Center, Durham, North Carolina—Neurosurgery

Rutherford, Robin Elizabeth (St. Petersburg, Florida) University of California, San Diego, California—Internal Medicine

St. Peter, Robert F. (Wichita, Kansas) University of Colorado, Denver, Colorado—Pediatrics

Sherrier, Robert Henry (Brielle, New Jersey) No PGY-1

Shortridge, Beth Ann (Atlanta, Georgia) Thomas Jefferson Hospital, Philadelphia, Pennsylvania—General Pediatrics

Sierra, Leslie Carol (Miami, Florida) Strong Memorial Hospital, Rochester, New York—Pathology

Silverstein, Jonathan Scott (Port Washington, New York) Mount Sinai Hospital, New York, New York—Radiology

Slater, Douglas Kenneth (Cape Coral, Florida) No PGY-1

Slaughter, Shelley Ruth (Washington, D. C.) Johns Hopkins Hospital, Baltimore, Maryland—Obstetrics and Gynecology

Smalley, Walter Edwards, Jr. (Kingsport, Tennessee) University of Virginia, Charlottesville, Virginia—Internal Medicine

Smith, Stephen Richard (Parkersburg, West Virginia) Duke University Medical Center, Durham, North Carolina—Internal Medicine

Sobol, Warren Michael (Wilmington, North Carolina) Baylor College of Medicine, Houston, Texas—Ophthalmology

Spain, Claire Leona (Chicago, Illinois) Madigan Army Medical Center, Tacoma, Washington—Obstetrics and Gynecology

Stave, Gregg Martin (Manhasset Hills, New York) Medical College of Virginia, Richmond, Virginia—Internal Medicine

Suh, Eall Joo (Morganton, North Carolina) New York University, New York, New York—Pediatric Surgery

Takla, Medhat William (Raleigh, North Carolina) Northwestern University Medical Center, Chicago, Illinois—General Surgery

Taylor, Dean Curtis (Livonia, Michigan) Fitzsimons Army Medical Center, Aurora, Colorado—Orthopaedic Surgery

Taylor, Patrick Alan (Miami, Florida) University of Miami-Jackson Memorial Hospital, Miami, Florida—Emergency Medicine

Thompson, John Paul (St. Petersburg, Florida) Duke University Medical Center, Durham, North Carolina—Radiology

Trellis, Dan Robert (Pittsburg, Pennsylvania) Barnes Hospital, St. Louis, Missouri—Internal Medicine

Treseler, Catherine Pauline Benzinger (Bremerton, Washington) Duke University Medical Center, Durham, North Carolina—Internal Medicine

Tripathy, Debasish (New Orleans, Louisiana) Duke University Medical Center, Durham, North Carolina—Internal Medicine

Tripp, Henry Franklin, Jr. (Greensboro, North Carolina) Baylor College of Medicine, Houston, Texas—Cardiac Surgery

Trippett, Tanya Maria (Mountain Home, Idaho) Duke University Medical Center, Durham, North Carolina—Pediatric Hematology/Oncology

Tsai, Joseph Chen (Rocky River, Ohio) University of Pennsylvania, Philadelphia, Pennsylvania—Radiology

Umhau, Andrew Nufer (Chevy Chase, Maryland) Georgetown University, Washington, D.C.—Internal Medicine

Veronee, Charles DuRant (Summerville, South Carolina) Duke University Medical Center, Durham, North Carolina—Academic Thoracic Surgery

Warner, Charles Hamilton (Charlotte, North Carolina) Roanoke Memorial Hospital, Roanoke, Virginia—Radiology
 Weston, Brent W. (Birmingham, Michigan) North Carolina Memorial Hospital, Chapel Hill, North Carolina—Pediatrics
 Wiley, James Freeman, II (Raleigh, North Carolina) Children's Hospital of Philadelphia, Philadelphia, Pennsylvania—Pediatrics
 Willett, Ralph Pope (Raleigh, North Carolina) University of Tennessee College of Medicine, Memphis, Tennessee—General Surgery
 Windom, Hugh L. (Sarasota, Florida) Georgetown University, Washington, D.C. —Internal Medicine
 Zeitler, Philip Scott (Malden, Massachusetts) University of Washington, Seattle, Washington—Pediatrics



School of Nursing



The Master of Science in Nursing Program

The School of Nursing offers a program leading to the Master of Science in Nursing degree, which educates professional nurses for advanced practice in a clinical specialty or administration. Graduates will be prepared to function as clinical specialists in tertiary care settings or as mid-level administrators in complex organizations and to use high technology support systems for information and patient services.

The integration of education, practice, and research undergirds the entire curriculum and the behavior of those individuals involved in the educative process.

A graduate of the program will be expected to:

1. synthesize concepts and theories from nursing and related disciplines to form the basis for advanced practice;
2. demonstrate expertise in a defined area of advanced practice;
3. conduct scientific inquiry to validate and refine knowledge relevant to nursing;
4. demonstrate leadership and management strategies for advanced practice;
5. demonstrate proficiency in the use and management of advanced technology related to patient care and support systems;
6. analyze socio-cultural, ethical, economic, and political issues and develop strategies to influence the outcomes, and demonstrate the ability to engage in collegial intra- and interdisciplinary relationships in the conduct of advanced practice.

The curriculum is designed to provide maximum flexibility for part-time study during both day and evening hours. Students will have advisers who have expertise and research interests in the student's chosen area of specialization. A student may choose one of the three areas in which to specialize: (1) critical care—adult or child; (2) oncology—adult or child; and (3) administration of nursing services. An emphasis on scholarship and practice will be maintained throughout the curriculum.

General Curriculum Design	Credits
Theoretic and Scientific Bases for Advanced Practice	3
Organizational Behavior and Processes	3
Health Care Technology	3
Processes of Inquiry	6
Area of Specialization, Content and Practice	12-15
Elective	3-6
Thesis	6
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Admission Requirements

1. Bachelor's degree with an upper division nursing major from a program accredited by the National League for Nursing.
2. Minimum of one year's experience in an area relevant to projected course of study in a clinical specialty and three years for administration.
3. Undergraduate grade point average of 3.0 on a 4.0 scale.
4. Satisfactory performance on the Graduate Record Examination.
5. Satisfactory completion of a course in descriptive and inferential statistics.
6. Eligibility to be licensed as a professional nurse in North Carolina.
7. Documentation of the acquisition of physical assessment knowledge and skills for those applicants choosing a clinical specialty.
8. Three references attesting to personal and professional qualifications. At least two references must be from former employers, faculty members, or deans.
9. Personal interview. Other arrangements may be considered when distance is a factor.

Selection will be based on the applicant's qualifications, intellectual curiosity, and potential for professional growth and contribution to the profession. Exception to any of these requirements will be considered on an individual basis. Students are chosen without regard to race, religion, sex, or national origin.

Date for Application

An application for study, with all supporting documents, must be submitted by March 1 for fall semester early admission. Applications for part time study must be received by March 1, July 1 or January 1.

Courses

NUR-300. Theoretic and Scientific Bases for Advanced Nursing Practice. The major components of this core course—nursing, health, persons, and society—are approached as the bases for advanced nursing practice in a complex health care center. The focus is the analysis of relevant principles, theories, and issues for the synthesis of a framework for advanced nursing practice. 3 credits.

NUR-303. Organizational Behavior and Processes. This course will examine the key concepts and elements which form the basis for understanding and analyzing the similarities and differences of groups and complex organizations. Selected theories of group and organizational dynamics, structure, process, and behaviors will be presented. 3 credits.

NUR-306. Health Care Technology. This course is designed to provide an eclectic study of technological modalities presently used to assist in the diagnosis

and treatment of patients, planning and monitoring of care, management of information, and communicating among care providers. The student will be provided opportunities for the development of knowledge, intellectual skills and clinical competence. The philosophy and ethical dilemmas inherent in the use of sophisticated equipment are examined. 3 credits.

NUR-309. Processes of Inquiry I. The focus of this course is on scientific inquiry and research methods needed for systematic investigation to expand the knowledge base relevant to nursing. Published research studies concerning health care will be critically analyzed. 3 credits.

NUR-310. Processes of Inquiry II. The emphasis of this course is on the relationships among research design, methodology, and statistical techniques. Application and interpretation of statistical procedures will be studied in relation to the most common research designs used in health care and nursing. 3 credits.

NUR-320. Critical Care Nursing I. This course presents a perspective on selected developmental, family, and epidemiologic theories (Module 1) and covers in-depth cardiovascular problems, treatment, and technology (Module 2) as a basis for advanced nursing practice. Both modules include didactic and clinical experience. 4 credits.

NUR-322. Critical Care Nursing II. This course focuses on the complex problems, treatment and technology of the renal, urologic, and gynecologic systems (Module 1) and on the respiratory, neuroendocrine, and gastrointestinal systems (Module 2) as a basis for advanced nursing practice. Both modules include didactic and clinical practice. 4 credits.

NUR-324. Critical Care Nursing III. This course focuses on the complex problems, treatment, and technology of traumatic injury, including burns and musculoskeletal insults (Modules 1) and on role, planning, and trends in critical care (Module 2) as a basis for advanced nursing practice. Both modules include didactic and clinical experience. 4 credits.

NUR-330. Oncology Nursing I. This course provides an in-depth understanding of the pathophysiological and biobehavioral aspects of cancer across the life span. Major topics include: (1) advances in treatment (2) management of disease and treatment and (3) biopsychosocial assessment of patients. Both didactic and clinical experiences are included in the course. 4 credits.

NUR-332. Oncology Nursing II. *Module 1, Economics of Cancer.* This module includes: (1) the functions of a comprehensive cancer center, (2) the economic issues involved in the problems of cancer, (3) demographic trends such as increased longevity with increased incidence of cancer and life style patterns, (4) cancer as a chronic illness across the life span and the potential long term sequelae of treatment and (5) policy issues related to appropriation of funds for cancer research and practice. 4 credits.

Module 2, Rehabilitation of the Patient with Cancer. This module includes: (1) the use of strategic therapy and coping skills as the patient accepts and participates in active cancer treatments, (2) biobehavioral theories of stress and disease, (3) nursing interventions to improve patient functional status, and (4) therapeutic communication and (5) the application of behavioral interventions. Both didactic and clinical experiences are included in the course.

NUR-334. Oncology Nursing III. This course focuses on: (1) the role of the clinical specialist caring for patients participating in clinical trials using technological advances in the treatment of cancer; (2) major problems resulting from cancer and its related treatment; (3) the importance of inter- intra-agency collaboration at the local, state, and national level; (4) theories of therapeutic alliance and codecision

making that increase patient participation; and (5) the development of effective coping strategies needed in caring for patients with cancer. Both didactic and clinical experiences are included in the course. 4 credits.

NUR-340. Nursing Management in Complex Organizations I. This course focuses on those structural elements, issues, and situations that are the responsibility of the mid-level nurse manager in a complex organization. Management and organizational theories are used to develop strategies for dealing with stress imposed by internal and external forces in the environment. 3 credits.

NUR-342. Nursing Management Practicum I. The student observes and applies those concepts and theories that support the integrative functions and responsibilities of a mid-level nurse manager in a complex organization. Placement in service agencies is arranged to be congruent with the student's career plans. Prerequisite: NURS-340 or concurrent. 3 credits.

NUR-344. Nursing Management in Complex Organizations II. This course focuses on the examination of processes that facilitate the achievement of a high level of quality patient care, employee productivity, and employee development in a complex environment. Leadership theories and concepts are used to analyze the adaptive mechanisms needed by the mid-level nurse manager in a dynamic and technologic environment. 3 credits.

NUR-346. Nursing Management Practicum II. This practicum experience provides the student with the opportunity to apply knowledge and skills in the management of select processes within a dynamic and technologic environment. Identification of strategies, intervention, and evaluation of various approaches to nursing management are investigated. Placement in service agencies is arranged to be congruent with the students' career plans. Prerequisite: NURS-344 or concurrent. 3 credits.

NUR-348. Budget Planning and Financial Management. This course focuses on the knowledge and skills required by the mid-level nurse manager for budget planning and fiscal management of a defined unit or department. Health care economics, technology, standards of practice, staffing, and patient classification are examined from a budgetary perspective and within an environment of regulations and constraints. 3 credits.

NUR-350. Thesis. 6 credits.

NUR-399. Select Topics or Independent Study. Students select a topic of professional interest from within the specialty area or in support of the specialty area, to be studied with a faculty member. Specific objectives, evaluation methods, and other requirements are determined prior to registering for the course of study. 1-3 credits.

Electives. Courses to be offered as electives will be developed by the nursing faculty in addition to courses offered by other departments and schools within the University. Elective courses are to be supportive of the area of specialization. 3-6 credits.

For additional information, please contact the Office of the Assistant Vice-President for Health Affairs and Dean of Nursing, Duke University Medical Center, Box 3714, Durham, North Carolina 27710, (919) 684-3786 or (919) 684-2402.



The Allied Health Programs



The Allied Health Programs

There are several health-services educational programs offered at the Duke University Medical Center that are neither medicine nor nursing. Every effort is made to keep each of these allied health programs closely related to the Medical School departments whose field they serve.

Several of today's allied health occupations require less than the baccalaureate level of education. Although the Duke University Medical Center has several such programs, they are often taught in junior colleges, technical institutes, or community hospitals. Such training programs in the latter institutions can frequently benefit from resources generally available only from medical centers, e.g., (1) in choosing programs appropriate to their resources and needs, (2) in developing articulated curricula, (3) in upgrading or attracting competent faculty, and (4) in arranging meaningful affiliations between the educational and the clinical care institutions that are required for many of these programs. The programs arrange, whenever possible, to help provide such resources to institutions located within the adjacent geographic region.

Programs in hospital administration and dietetics were initiated at the Medical Center in 1930. Programs in several disciplines dealing primarily with the laboratory aspects of clinical medicine began soon afterward. Due to marked advances in the field of medicine, new allied health programs were developed in the early 1960s to assist in the many medical specialties. Today there are approximately 300 students enrolled in Duke University allied health programs.

Admissions

Admissions to all Duke University educational programs are reviewed by an appropriate admissions committee. Students matriculating in the various allied health programs must meet the admission standards of that program.

Resources for Study

All of the study facilities available to medical students are available to allied health students. See descriptions for Library/Communications Center, the Thomas D. Kinney Central Teaching Laboratory and Division of Audiovisual Education which may be found in a foregoing portion of this bulletin.

Several of the allied health programs have affiliations with other hospitals and medical institutions for clinical instruction.

Student Life

Living Accommodations. Because of the shortage of residential space, students enrolled in allied health certificate programs are not eligible for student housing. Information concerning housing is provided on request by the Central Campus Office, Department of Housing Management, 217 Anderson Street, Durham, North Carolina 27705.

Dining Facilities. Duke University Food Services (DUFs) operates a variety of dining facilities, including cafeterias, snack bars, restaurants, salad bars, and more. Students may make food purchases in DUFs establishments with cash, or they may choose to open a pre-paid account. Information about the various types of accounts is available from the Auxiliary Services Contract Office, 024 Union West, Duke University, Durham, North Carolina 27706 919/684-5800.

Cafeterias operated by the hospital are available both in the medical center and the Veterans Administration Medical Center.

Student Financial Aid. Duke University recognizes the responsibility of students and their families to provide funds according to their ability to achieve the educational objective. Students are encouraged to pursue every available source of support through their local and state student assistance programs.

All programs are approved for veterans education benefits (G.I. bill) for those who are eligible. Some of the programs have limited student support available through stipends or special scholarships.

Financial aid is available through Duke in limited amounts in the form of loans. When all institutional funds are pooled, the amount available to a totally needy student is inadequate to meet the school's recognized costs. Duke University is a lender under the Federally Insured Guaranteed Student Loan Program. A Financial Aid Form (FAF) or a Graduate and Professional Schools Financial Aid Service (GAPSFAS) form from applicants and their parents (and spouse, if applicable) is required in addition to the Duke University Financial Aid Application. A copy of the student's (and spouse's, if applicable) federal income tax return for the previous taxable year is required. In the case of the dependent student, a copy of the parent's federal income tax return for the last taxable year is also required. Duke University reserves the right to decline to approve loan applications for those applicants who do not have a satisfactory credit history. U.S. citizenship or permanent residence visa is required of all students receiving loans through the school.

It is the responsibility of recipients of financial aid to keep the Medical Center Office of Financial Aid informed of any outside financial assistance they may receive. It must be understood that Duke reserves the right to reconsider its offer of financial assistance in the event of a major outside award to a recipient. No financial aid funds may be used during a period when the recipient is not involved with work toward the degree or certificate. Part-time or special students are not eligible for financial aid.

Students who have been accepted for matriculation routinely receive financial aid applications. Annual reapplication is required of all financial aid recipients.

Pell Grant (formerly BEOG) is a federally funded grant for students with financial need who have not earned a baccalaureate degree and are enrolled in any postsecondary educational program. To apply the applicant completes a Financial Aid Form (FAF) which may be obtained from a high school guidance counselor or any financial aid office.

North Carolina Student Incentive Grant (NCSIG) is available to residents of North Carolina who are enrolled in any postsecondary educational program in North Carolina. The applicant must demonstrate substantial financial need and must not have earned a baccalaureate degree. Application deadline is 1 March for

the following academic year. To apply the applicant completes a Financial Aid Form (FAF) requesting that the information be sent to College Foundation, Inc., 1307 Glenwood Avenue, Raleigh, North Carolina 27605. FAFs may be obtained from a high school guidance counselor, or financial aid office.

North Carolina Legislative Tuition Grant is a direct grant of \$950 from the state to each North Carolinian enrolled in a private educational institution in North Carolina who is studying toward the first baccalaureate degree. No application is required.

North Carolina Student Loan Program for Health, Science, and Mathematics. These loans provide financial assistance to North Carolina residents who demonstrate need as determined by the board. Loans are available for study in the medical fields, mathematics, and science programs that lead to a degree. The applicant must be a domiciliary of North Carolina and accepted as a full-time student in an accredited associate, baccalaureate, master's, or doctoral program leading to a degree. Loan recipients in professional or allied health program may cancel their loans through approved service in shortage areas, public institutions, or private practice. Medical students may receive up to \$6,000 per year for each of the four years; master's degree students are eligible for two loans of up to \$3,000 each; bachelor's degree students are eligible for three loans of up to \$2,500 each. For application forms and more information write: Executive Secretary, Board for Need-Based Student Loans, 116 West Jones Street, Raleigh, North Carolina 27605, or telephone (919) 733-2164.

Every effort will be made to assist the student with tuition and living expenses within the framework of school policies which may be in effect at the time. However, as funds are limited, prior indebtedness will not be given favorable consideration as part of the student's budget. A financial aid brochure and student budget for each allied health program are available, upon request, in the spring of each year. Any applicant having further questions may write to the Coordinator, Financial Aid, 126 Davison Building, Box 3005, Duke University Medical Center, Durham, North Carolina 27710.

Student Health Service. Student health service, health insurance, and counseling and psychological services, fully described in an earlier portion of this bulletin are available to all allied health students.

Athletic Events. All students paying the full Duke University undergraduate tuition are issued Duke University identification cards and may attend all home intercollegiate athletic contests on a first-come, first-served basis. Graduate students and those enrolled in certificate programs may purchase a book of tickets for regular season home football and basketball games. All tickets are sold on a first-come, first-served basis. The ticket office is located in Cameron Indoor Stadium.

Judicial System and Regulations. Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of scholarship and conduct. Each student is subject to the rules and regulations of the University which are currently in effect or which are, from time to time, put into effect by the appropriate authorities of the University. At the same time, the individual is responsible for decisions and choices within the framework of the regulations of the community as Duke does not assume in loco parentis relationships.

Any student, in accepting admission, indicates a willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension or expulsion, for failure to abide by these regulations or for other conduct adjudged unsatisfactory or detrimental to the University. A copy of the Allied Health Judicial System including a code of ethics, rules of conduct, and judicial procedures will be provided each student.

Fees for Transcripts. Requests for transcripts of academic records should be directed to the Office of the Medical Center Registrar. A minimum fee of \$1, payable in advance, is charged for each copy.

Student Health Fee. All regular full-time students and part-time degree candidates (undergraduate, graduate, and professional) are required to pay the health fee that is nonrefundable after the first day of classes in the semester. The student health fee entitles the student to outpatient treatment through the Student Health Service or inpatient treatment in the Infirmary. The health fee is not to be confused with the Duke Student Accident and Sickness Insurance (the premium for this insurance is minimized due to the existence of the Student Health Services) which covers a large number of medical costs above and beyond the treatment available through the Student Health Services. The identification of a separate student health fee in no way changes the policy concerning the Student Accident and Sickness Insurance. A Student Health brochure will be distributed at the time the semester enrollment card is picked up at the beginning of the term.

Student Accident and Sickness Insurance. At time of matriculation, students must provide proof of coverage under an accident and sickness insurance policy or purchase the Duke Student Accident and Sickness Insurance policy. This insurance policy provides protection twenty-four hours per day during the twelve-month term of the policy of each student insured. Students are covered on and off the campus, at home, or while traveling between home and school and during interim vacation periods.

Refunds

If a student withdraws, tuition is refunded according to the following schedule:

Withdrawal from the Baccalaureate Program		Refund
Before classes begin		Full amount
During first or second week		80%
During third to fifth week		60%
During sixth week		20%
After sixth week		None
Withdrawal from Certificate Programs*		Refund
Before classes begin		Full amount
During first week		80%
After first week of classes		None

*Course fees for students in certificate programs are payable on a yearly basis.



Bachelor of Health Science Degree Program



Grading and Grade Requirements

Final grades on performance in academic work are sent to students after the examinations at the end of the fall and spring semesters.

Passing Grades. Passing grades are *A*, exceptional; *B*, superior; *C*, satisfactory; and *D*, low pass. A passing grade may be modified by a plus or minus. A *Z* may be assigned for the satisfactory completion of the first semester of a two-course sequence. This permits an instructor to assign an earned grade for the entire year during the grading period for the second course of the sequence.

The D Grade. Although the *D* grade represents low pass, no more than two courses passed with *D* grades may be counted among the thirty-two courses required for graduation.

Failing Grades. A grade of *F* or *U* (see pass/fail option below) indicates that the student has failed the course, which is recorded on the student's record. If the course is taken again, a second entry of the course and the new grade earned is made on the record, but the first entry is not removed.

Pass/Fail Grading Option. With the consent of the instructor and program director, a student may choose to be graded on a pass/fail basis in one elective course each semester or summer session.

A student enrolling in a course on a pass/fail basis completes all the work of the course but receives either a pass, (*P*), or fail, (*U*), in lieu of a standard grade. After the first two weeks of classes in any semester, no student may change to or from a pass/fail basis. A pass grade may not subsequently be converted to a regular letter grade nor may the course be retaken on a regular credit basis.

Grades When Absent from Final Examination. In all cases in which a student is absent from a final examination, an *X* is received instead of a final grade. If the student does not present an acceptable explanation for the absence to the Office of the Dean for Undergraduate Medical Education within forty-eight hours after the scheduled time of the examination, the *X* is converted to an *F*. If the absence is excused by the Dean the student arranges with the instructor for a makeup examination. An *X*, not cleared by the end of the semester following the examination missed, is converted to an *F*. See the section on Final Examinations and Excused Absences.

Grades for Incomplete Work. If because of illness or other emergency a student's work in a course is incomplete, an *I* may be received for the course instead of a final grade. Incomplete courses must be completed before the close of

the succeeding semester; otherwise, the *I* is converted to an *F*. Seniors must complete all courses before graduation. A student whose work is incomplete and who is also absent from the final examination receives an *X* for the course.

For the purpose of determining if a student satisfies continuation requirements, an *I* is counted as failing to achieve satisfactory performance in that course.

Graduation and Continuation Requirements

Continuation Requirements. A student must achieve a satisfactory record of academic performance and make satisfactory progress toward graduation each semester. To remain in the University a student must not fail two or more courses in any semester. A student who, for any special reason, has been permitted to enroll for three or fewer courses must pass all courses.

Students are reminded that in cases where continuation is in question, incomplete work in any course is counted as a failure to achieve satisfactory performance in that course. Such courses must be completed in time for final grades to be submitted to the Registrar no later than the day preceding the opening of the spring semester or 15 June in the summer. Any student excluded under the provisions of this regulation may request to have the case reviewed by the Dean, Undergraduate Medical Education.

Requirements for Degree. To be graduated a student must pass a minimum of thirty-two courses (including the sixteen courses required for admission) and all courses prescribed in the program of study. Of the courses required for graduation, no more than two courses with *D* grades will be accepted.

Residence Requirements. At least sixteen semester-courses must be completed satisfactorily at Duke. This must include the final four semesters.

Commencement

Graduation exercises are held once a year in May, when degrees are conferred on, and diplomas issued to those who have completed requirements by the end of the spring semester. Those who complete degree requirements by the end of a summer term or the end of a fall semester become eligible to receive diplomas dated 1 September or 30 December, respectively. There is a delay of about one month in the mailing of September and December diplomas because the diplomas are mailed after final approval by the Academic Council and the Board of Trustees. Any persons who receive diplomas dated 1 September or 30 December may return for the commencement weekend and participate in the graduation exercises in May following the date of the diploma.

Eligibility for Academic Honors

To determine eligibility for academic honors, only letter grades earned at Duke, with the exception of the *P* (pass) grade, enter into the calculation of the average.

Graduation Honors. Full-time or part-time students who earn the following averages for all work taken at Duke are graduated with honors: a 3.3 average earns a degree *cum laude*; a 3.6 average earns a degree *magna cum laude*, and an average of 3.8 or above earns a degree *summa cum laude*.

Course Information

The unit of credit for academic work is the semester-course. Double-courses and half-courses are recognized.

Transfer Credit. Duke credit may be granted for course work satisfactorily completed at other regionally accredited, degree-granting institutions. Courses in which grades of less than C have been earned are not accepted for transfer credit. Semester-course credit awarded at Duke for satisfactorily completed courses cannot, of course, be directly equated with semester-hour or quarter-hour credits. A semester's work accepted as a normal course load by the other institution transfers as a block of four course units at Duke, provided the courses taken at the other institution are acceptable by Duke as Duke course equivalents or electives. Ordinarily, transfer students will not be awarded more than four course units for one semester's work unless they have satisfactorily completed more than the normal course load at the institution from which they transferred. All courses approved for transfer credit are listed on the student's permanent record at Duke (unless the student has received a degree) but grades earned in such courses are not recorded. Courses taken at other institutions are evaluated by the Medical Center Registrar.

Students who transfer to Duke may receive credit for a maximum of two years of work at other institutions of approved standing. No credit is given for work completed by correspondence, and credit for no more than two semester-courses is allowed for extension courses.

Course Load and Eligibility for Courses. The normal and expected course load each semester is four to five semester-courses. To take fewer than four or more than five semester-courses in any semester, a student must have the approval of the program director and the Dean for Undergraduate Medical Education. No student, however, may take more than six courses in any semester.

Course Audit. With the written consent of the instructor and the program director, a full-time degree student is allowed to audit one or more courses in addition to the normal program. After the first two weeks of classes in any semester, no student classified as an auditor in a particular course may take the course for credit, and no student taking a course for credit may change classification to an auditor. A student may not repeat for credit any course previously audited. Auditors submit no daily work, take no examinations, and receive no credit for courses.

Course Changes after Classes Begin. Students, with the approval of the program director, may drop and add courses during the first two weeks of classes. Courses added during the second week of classes require the approval of the appropriate instructor in addition to that of the program director.

Students may drop a course without penalty until the time midsemester grades are assigned if they are clearly carrying a course overload. Factors such as poor health or necessary outside work are also considered in permitting withdrawal from courses without penalty. A W is entered on the permanent record in lieu of a grade in all cases where withdrawal without penalty is approved. After the time limit has expired, withdrawal from any course will ordinarily result in a grade of F. Courses discontinued prior to midsemester without approval will also be assigned an F.

Class Attendance and Excused Absences

Responsibility for class attendance rests with the individual student. Students are expected to attend classes regularly and punctually and must accept the consequences of failure to attend. An instructor is privileged to refer students to the Dean for Undergraduate Medical Education for suitable action if, in the opinion of the instructor, their work or that of the class suffers because of absences. When excessive absences result in a student's failure to carry a normal course load, the Dean for Undergraduate Medical Education, after a conference with the

student, will determine whether the student may continue enrollment in the college.

Absences from required classes and tests ordinarily are excused only for illnesses certified by a proper medical official of the University, and for authorized representation of the University in out-of-town events. Officials in charge of groups representing the University in such events are required to submit names of students to be excused to the Office of the Dean for Undergraduate Medical Education forty-eight hours before absences are to begin.

Final Examinations and Excused Absences

Customarily, an examination is the final exercise in an undergraduate course, but it is understood that not all courses profit from this process. Therefore, unless departmental policy stipulates otherwise, the conduct of the final exercise is determined by the instructor, except that a final written examination may not exceed three hours in length and a final take-home examination may not require more than three hours in the actual writing.

Absences from final examinations are excused by the Dean for Undergraduate Medical Education only in exceptional circumstances, such as illness certified by a medical official of the University or other conditions beyond the control of the student. A student who misses a final examination must notify the Office of the Dean for Undergraduate Medical Education within forty-eight hours after the scheduled time of the examination. Failure to so notify and to present an acceptable reason for absence from the examination will result in the student's receiving an *F* in the course.

Changes in Status

Withdrawal and Readmission. A student who wishes to withdraw from the University must give official notification to the Dean for Undergraduate Medical Education. Withdrawals at student initiative prior to the Thanksgiving recess in the fall semester or prior to 15 April in the spring semester are coded as voluntary, and a *W* is entered in lieu of a grade for each course. Voluntary withdrawals after these dates are permitted only in the event of emergencies beyond the control of the student.

Applications for readmission are made to the Medical Center Registrar. Each application is reviewed by the admissions committee of the program to which the student applies. A decision is made on the basis of several criteria including the applicant's academic record at Duke, the prospects of completing requirements for graduation, the student's citizenship record at Duke, evidence of increasing maturity and discipline, the degree of success attendant upon activities during the time away from Duke, and finally the applicant's relative standing among the group of students applying for readmission.

Leave of Absence. A student in good standing may apply in writing to the Dean for Undergraduate Medical Education to take a leave of absence for one or two semesters. The application must come before the end of the fall semester for a leave of absence during the spring semester, and before 15 July for a leave of absence during the fall semester. If the leave is approved, the student must keep the Dean informed of any change of address.

Full-Time and Part-Time Degree Status. Normally, undergraduate students who are candidates for degrees are expected to enroll for a normal course load each semester. A student who needs to change from full-time status, or from part-time to full-time status, must have the approval of the program director and the Dean for Undergraduate Medical Education. For special reasons approved by

the program director and the Dean, a full-time degree student who is qualified to continue may register in a part-time degree status for no more than two courses.

Admission

Students seeking admission to the Bachelor of Health Science degree program must have completed two years of study at an accredited institution. In addition, they must have a minimum of sixteen course equivalents (sixty semester-hours/ninety quarter-hours) of transferable credit including at least one course in English, three in natural science, three in social sciences or history, and one in humanities. Additional requirements are listed in the description of the program.

Other Information

Release of Student Records. No confidential information contained in student records (academic or otherwise) is released to non-University persons or to unauthorized persons on the campus without the consent of the student. Consent is evidenced by each student's signing a form which authorizes the release of personal data. The form may provide for the release of information to one or more persons or agencies only, or it may be a blanket release. Blank forms to authorize or revise the permission are available in the office of the program directors.

Identification Cards. Undergraduate students are issued identification cards which they should carry at all times. The cards are the means of identification for library privileges, University health services, athletic events, and other University functions or services open to them as University students. Students will be expected to present their cards on request to any University official or employee.

The cards are not transferable, and fraudulent use may result in loss of student privileges or suspension. A student should report the loss of this card immediately to the Registrar's office. The cost of a new identification card is \$5.

Payment of Bursar Accounts for Fall and Spring. Monthly invoices for tuition, fees, and other charges will be sent by the Bursar's office and are payable by the invoice due date; no deferred payment plans are available. As a part of the agreement of admission to Duke University a student is required to pay all invoices as presented. If full payment is not received, a late payment charge as described below will be assessed on the next invoice and also certain restrictions as stated below will be applied.

Late Payment Charge. If the total amount due is not received by the invoice due date, the next invoice will reflect a penalty charge of 1 percent assessed on to the past due balance. The past due balance is defined as the previous balance less any payments and credits received on or before the due date and also any student loan memo credits, related to the previous balance, which appear on the invoice. The amount of the 1¼ percent penalty charge will be the same regardless of the number of days payment is received after the due date.

Restrictions. An individual will be in default of this agreement if the total amount due on the student invoice is not paid in full by the invoice due date. An individual who is in default will not be allowed to register for classes, receive a transcript of academic records, have academic credits certified, be granted a leave of absence, or receive a diploma at graduation. In addition, an individual in default may be subject to withdrawal from school.

Tuition and Fees*

Estimated Expenses for an Academic Year. Certain basic expenditures such as tuition, board, and room are to be considered in preparing a student's budget.



For the Bachelor of Health Science program the estimated expenses are:

Tuition	\$7,400 first year; \$7,050 second year
Books, uniforms, and supplies	\$900 per year
Food	\$220 per month
Laboratory Fee	\$200
Lodging	\$235 per month
Student Health Fee	\$101 per semester
Student Accident and Sickness Insurance	\$233 per year (single)
	\$650 per year (married)
Miscellaneous (travel, laundry, clothing, etc.)	\$205 per month

Registration Fees and Deposits. On notification of acceptance, baccalaureate degree students are required to pay a nonrefundable first registration fee of \$30.* Students in the Physician Assistant Program are required to make a deposit of \$75. The deposit will not be refunded to accepted applicants who fail to matriculate. For those who do matriculate, the deposit is applied to the cost of tuition.

Late Registration. Students who register in either semester at a date later than that specified by the University must pay to the Bursar a fee of \$25.

Part-time Students. In the regular academic year, students who register for no more than two courses in a semester are classified as part-time students. Part-time students are charged at the following rates: One course, \$740; half-course, \$370. Registration for more than two courses requires payment of full tuition.

Auditors. Auditing of one or more courses without charge is allowed students paying full fees, provided that the consent of the instructor is obtained.

Duke Employees. Full-time employees with one or more years of service with the University may request permission to take for credit or audit up to two courses during any one semester. Permission may be granted based on the individual merits and circumstances of each application. Employees receiving permission to take such courses for credit will be charged one-half of the tuition rate for part-time students as shown above. Employees are required to submit a formal application by 1 December or 15 July.

*These are estimated figures only. Tuition and fees are subject to change without notice.

Physician Assistant Program



Duke University Medical Center awards a Bachelor of Health Science degree to students who complete the Physician Assistant Program.

Physician Assistant Program

PHYSICIAN ASSISTANT PROGRAM ADMINISTRATION

Acting Chairman: George R. Parkerson, Jr., M.D., *Department of Community and Family Medicine*
Program Director: Reginald D. Carter, Ph.D., PA, *Assistant Professor of Community and Family Medicine*

Medical Director: Michael Hamilton, M.D., *Assistant Professor of Community and Family Medicine*

Clinical Coordinator: Jack Lord, PA-C, *Clinical Associate*

Educational Coordinator: J. Victoria Scott, PA-C, *Clinical Associate*

Surgical Coordinator: Paul Hendrix, PA-C, *Medical Research Associate*

Pediatrics Coordinator: Marcia Herman-Giddens, PA-C, M.P.H., *Assistant Clinical Professor of Pediatrics and Community and Family Medicine*

Clinical Site Coordinators: Daniel Mattingly, PA-C; Joyce Nichols, PA-C; James Schmidt, PA-C

TEACHING STAFF AND FACULTY

Michael A. Hamilton, M.D., *Patient Assessment, Anatomy and Physical Diagnosis*; Reginald D. Carter, Ph.D., PA, *Anatomy and Physical Diagnosis, Medical Sciences*; J. Victoria Scott, PA-C, *Patient Assessment, Clinical Medicine, Physical Diagnosis, Perspectives on Health, Behavioral Medicine*; Jack Lord, PA-C, *Patient Assessment, Perspectives on Health, Surgery (ACLS), Physical Diagnosis*; Katherine Halpern, PA-C, *Anatomy and Physical Diagnosis*; Max Isbell PA-C, *Anatomy and Physical Diagnosis*; Paul Hendrix, PA-C, *Anatomy, Fundamentals of Surgery*; Marcia Herman-Giddens, PA-C, *Introduction to Pediatrics*; Leaf Diamant, M.A., *Patient Assessment*; Joseph Kertesz, M.A., *Behavioral Medicine*; Suydam Osterhout, M.D., *Microbiology*; Margaret Schmidt, MT(ASCP)SH, M.A.T., *Medical Technology*; Iris W. Long, MT (ASCP), M.A.T., *Laboratory Sciences*; Carolyn Chiles, M.D., *Radiology*; Joseph C. Greenfield, M.D., *Professor and Chairman, Department of Medicine, and Staff, Internal Medicine*; David Sabiston, M.D., *Professor and Chairman, Department of Surgery, and Staff, Surgery*; Samuel Katz, M.D., *Professor and Chairman, Department of Pediatrics, and Staff, Pediatrics*; Bernard J. Carroll, M.D., *Professor and Chairman, Department of Psychiatry, and Staff, Psychiatry and Behavioral Sciences*; E. Harvey Estes, M.D., *Family Medicine*; George R. Parkerson, Jr., M.D., *Community Medicine* In addition to the above, the program calls upon teaching resources of affiliated community practitioners and members of the Departments of Medicine, Surgery, Obstetrics/Gynecology, and Pediatrics.

In 1965 Duke University Medical Center began an innovative program designed to prepare highly educated and well-trained assistants for physicians. The program originated when clinicians at the Medical Center realized that they could enhance their productivity by safely and effectively delegating many of their tasks and responsibilities to nonphysicians, primarily ex-military corpsmen with previous health-related education and experience. Dr. Eugene A. Stead, Jr., then Chairman of the Department of Medicine at Duke, recognized the potential of the corpsmen experience and concluded that paramedical personnel might be

trained to provide primary health care under the supervision of a physician. In developing the Department of Community and Family Medicine, Dr. E. Harvey Estes, Jr. foresaw that midlevel practitioners would help increase consumer access to health services, and extend the time and skills of the physician in providing comprehensive health care.

The physician assistant possesses a broad understanding of medicine and health care. Men and women are chosen for the program on the basis of their humanistic perspective, demonstrated commitment to providing health care, and their academic potential.

On completion of the two-year program, graduates are prepared to assist in the evaluation and management of common health problems, including both acute self-limited problems and chronic illnesses such as hypertension and diabetes. Recognizing the intrinsic relationship between emotional and physical health, the program stresses competence in the exploration of psychosocial concerns. Graduates are expected to have a basic fund of knowledge pertaining to health needs of infants and children, young and middle-aged adults, and geriatric patients. Physician assistants also provide patient care services such as diagnostic and therapeutic procedures, wound suturing, cast application, and basic laboratory procedures.

Upon successful completion of the program, Duke University Medical Center awards the student a Bachelor of Health Sciences degree and a Physician Assistant Certificate.

Program of Study. The curriculum is twenty-three consecutive months in duration and is designed to provide an understanding of the rationale for skills used in physical diagnosis and problem assessment. It focuses primarily upon the common problems seen in ambulatory care settings, so that the student is able to utilize and understand the various diagnostic, therapeutic, and supportive measures used by the primary care physician. The first ten months are devoted to the basic medical and behavioral sciences and the remaining thirteen months to clinical training in a variety of practice settings. The rigorous curriculum requires people who have had college level education and experience in a health-related discipline.

The preclinical curriculum is integrated in such a way as to introduce the student to medical sciences as they relate to clinical problems. Learning strategies include self-instructional study guides, teaching patients, lectures, seminars, laboratories, and small-group encounters. Clinical medicine and patient evaluation



are taught using the problem-oriented medical record format. The psychosocial aspects of clinical practice are emphasized as well as the physical aspects of disease processes.

As part of the clinical practicum students are required to take rotations in inpatient medicine, surgery/emergency services, family medicine, pediatrics, obstetrics/gynecology, and behavioral medicine. The final ten weeks of clinical training is spent away from Duke in a community setting.

Because the clinical teaching is carried out in many practice settings, students should plan on being away from the Durham area for part of their clinical experience.

Curriculum. Before proceeding into the clinical phase of the curriculum, students must satisfactorily complete the following:

Preclinical Schedule

<i>Fall Semester</i>		<i>Course Weight</i>
CFM 102	Basic Medical Sciences	1
CFM 103	Clinical Medicine	1
CFM 112	Anatomy and Physical Diagnosis	1
CFM 114	Patient Assessment I	1
PTH 115	Clinical Diagnostic Procedures	1
		<hr/> 5
<i>Spring Semester</i>		<i>Course Weight</i>
CFM 104	Clinical Medicine II	1½
CFM 101	Perspectives on Health	½
CFM 115	Patient Assessment II	½
CFM 106	Behavioral Aspects of Medicine	1
MIC 101	Introductory Microbiology	½
SUR 101	Fundamentals of Surgery	1
		<hr/> 5
<i>Summer Term 1</i>		<i>Course Weight</i>
CFM 105	Introduction to Pediatrics	1

After satisfactory completion of all basic science courses, students must complete the following:

Clinical Schedule

MED 150. General Medical Inpatient Service	2 courses	8 weeks
SUR 150. General Surgery	1 course	4 weeks
SUR 151. Outpatient/Emergency Surgical Service	1 course	4 weeks
OBG 150. Obstetrics and Gynecology	1 course	4 weeks
PED 150. Pediatrics	1 course	4 weeks
CFM 151. Family Medicine	1 course	4 weeks
CFM 152. Behavioral Medicine	1 course	4 weeks
<hr/> 8 courses		<hr/> 32 weeks

In addition to the above courses required for the B.H.S. degree, students must complete:

Four elective courses required for certificate	16 weeks
	Subtotal: 48 weeks
Final Preceptorship†	6 weeks
	<hr/> Total: 54 weeks

† This rotation is taken only during the summer of the last year. Prerequisites for Admission.

Prerequisites for Admission. To be eligible for the Bachelor of Health Sciences program, applicants must complete by 15 January (the application deadline) 60 semester-hours of college credit from an institution whose credits are transferable

to Duke University and which include one English course, one humanities course, three courses in the social sciences, and three courses in the natural sciences (two of which must be chemistry and biology). Of equal importance to the academic requirement is a minimum of six months of health care experience. This experience should involve direct patient contact and may be gained as a nurse, patient care assistant, military corpsman, or in other related fields such as medical technology, physical therapy, emergency medical technology, and counseling in health-related fields.

Application Procedures. Application materials and course bulletins are mailed to prospective applicants from 1 June through 15 December each year. Applications are accepted by the University no earlier than 1 September and no later than 15 January for the new class which enters in late August each year. Applications must contain:

1. a completed Duke University Medical Center Allied Health application form, including a nonrefundable fee of \$30;
2. official transcripts from all colleges or other academic institutions attended;
3. Scholastic Aptitude Test Scores of the College Entrance Examination Board, if already taken;
4. three letters of recommendation, to include one from an immediate supervisor and one from a physician with whom the applicant has worked;
5. Allied Health Professions Admissions Test scores, if applicant does not possess a bachelor's degree at the time application is submitted.

Selection Factors. The program has a specific interest in enrolling students from diverse social, ethnic, and educational backgrounds. Emphasis is placed upon personal maturity, quality of health care experience, dedication to the health field, and intellectual capacity. Information submitted by each applicant is carefully reviewed by the Committee on Admissions, and selected applicants are invited to Duke University for personal interviews. These interviews take place in mid-January, mid-February and mid-March of each year; students are chosen from among those interviewed. All applicants will be notified by 15 April regarding admission to the program. Requests for application forms and information should be directed to the Coordinator of Admissions, Physician Assistant Program, P.O. Box CFM-2914, Duke University Medical Center, Durham, North Carolina 27710.

Financial Aid. The financial aid office works closely with students to secure loans. Due to the limited amount of money available, requests are considered individually and approved on the basis of financial need. Part-time employment for students is available in many areas of the Medical Center. Frequently such employment may net students about \$200 per month and yet not jeopardize their education. Students must comply with the academic schedule and are prohibited from working more than twenty hours per week.

Courses of Instruction

Courses numbered from 150 through 189 either list specific prerequisites or have as prerequisite the completion of the junior year in one of the programs.

Double numbers separated by a hyphen indicate that the course is a year course and must normally be continued throughout the year if credit is to be received.

COMMUNITY AND FAMILY MEDICINE

CFM 102. Basic Medical Sciences provides students the basic facts, concepts, and principles that are essential to understanding the fundamental mechanisms of human physiology, pathology, pharmacology, and nutrition. Upon completion of the course, students should be able to use this fund of knowledge to solve

clinically-related problems and to advance into the clinical medicine course with sufficient knowledge to understand the underlying principles of the etiology, management, and prevention of various systemic disease processes. *Carter, Widmann and Hanlon*

CFM 103-104. Clinical Medicine presents basic material around which most other courses are organized. The course is organized into units proceeding through body systems, and combines material from anatomy, physiology, pharmacology, pathology, radiology, nutrition and clinical medicine. Units are divided into smaller modules which are objective-oriented, and learning is evaluated by unit tests addressed to these objectives. Students read reference material individually and attend lecture presentations during which basic scientists, practicing physicians and physician assistants explore important content areas in more depth. Emphasis is placed on topics pertinent to evaluation of health problems at the primary care level. *Scott, Carter and Osborne*

CFM 105. Introduction to Pediatrics. The purpose of this course is to introduce students to clinical problems commonly seen in ambulatory pediatrics. Through lectures and demonstrations, students learn basic concepts and practical approaches to the maintenance of health and the management of illness in infants and children. In small group sessions, students develop skills necessary to assess the normal development of children and to define an appropriate data base for specific clinical problems. Physical assessment and diagnostic techniques are demonstrated. The psychological, pharmacological, and nonpharmacological management of pediatric patients are discussed. This course is taught by members of the Department of Pediatrics. One course. *Herman-Giddens and staff*

CFM 106. Behavioral Aspects of Medicine. This course presents an extensive view of human behavior while concurrently developing skills that facilitate interpersonal awareness and psychological intervention. *Kertesz*

CFM 112-113. Anatomy and Physical Diagnosis. This course is taught by the program staff and clinicians from the Department of Surgery and Medicine. Students learn functional and applied anatomy as it applies to physical diagnosis and common clinical findings. Teaching methods for the anatomy component of the course include lectures, cadaver prosections, and audiovisual materials. Physical diagnosis is taught primarily through supervised practice of physical diagnosis skills. One course. *Hamilton, Hendrix, Carter, Scott, Lord, Halpern, Isbell, and staff from the Departments of Medicine and Surgery*

CFM 114-115. Patient Assessment. This course is taught by the program staff and clinicians from the Department of Medicine. Students learn and practice skills in medical interviewing and physical assessment, clinical decision making, and the accurate and efficient recording and presentation of clinical information. Teaching methods include lectures, small group seminars, role playing, and the supervised examination of patients. One and one half courses. *Scott, Lord, and staff from the Department of Medicine*

CFM 150. General Community Medicine. During this rotation students spend time with physicians in community practice, observing and participating in both office-based and hospital care. Students gain experience in doing both problem-specific and complete evaluations and through follow-up visits have an opportunity to monitor the results of therapy. Students learn to appreciate the impact of a patient's total environment on their health status. One or two courses. *Staff*

CFM 151. Family Practice. A four-, or eight-week clinical experience surveying the components of family practice, including emotional conflicts and interpersonal relationships with the patient and other members of the family unit. Through experience in interviewing and examining patients, the student is exposed to the

multi-faceted approach of understanding and treating physiologic and sociologic components of disease processes. In this situation, an understanding of the common diseases treated by primary care practitioners and the aspects of the unique relationship a physician's associate experiences with private patients, their physician, and other health team members is developed. One or two courses. *Warburton and staff*

CFM 152. Behavioral Medicine. A four-week clinical experience in behavioral sciences. Four days each week are spent at a facility involved in the treatment of behavioral disorders (i.e., community psychiatry, inpatient psychiatry, outpatient psychiatry, alcoholism treatment, etc.). Students learn and participate in the diagnosis and treatment of patients cared for at that site. One day each week is spent in a seminar reviewing interviewing skills and selected topics related to the patients seen at the various sites. One course. *Kertesz and staff*

CFM 180. Final Preceptorship. This rotation is required of all students during the final six weeks of their training and provides a transition between the role of the student and graduate physician's associate. Students are encouraged to select a preceptor in the area of their anticipated employment and, during this period of time, to explore the tasks and team aspects of functioning as a midlevel practitioner. Students will provide health services consonant with their backgrounds, clinical experiences, and the needs of the particular practice setting. Required for certificate. Two and one-half courses. *Lord, Hamilton, and staff*

CFM 191. Independent Study. This special four-week course enables students to select individually with program administrators a series of objectives and to develop a program that can reasonably be expected to achieve those objectives. One course. *Estes, Hamilton, and staff*

MEDICINE

MED 150. Inpatient Medicine. An eight-week full-time required clinical rotation in which the student learns to apply basic medical knowledge to the problems and situations encountered on an inpatient service. By collecting a data base, formulating a complete problem list, participating in daily rounds, and participation in the management of patient problems, the student develops an awareness and understanding of the multiple aspects of disease processes and becomes familiar with therapeutic regimen and dispositions relative to specific disease states. The student will present the data base of each new patient to the supervising physician or attending rounding physician in a coherent, concise fashion. Two courses. *Staff*

MED 151. Outpatient Medicine. During this rotation, the student learns to apply basic medical knowledge to the common problems and situations encountered on an outpatient/emergency service. Experience may include long-term follow-up of patients with chronic disease, emergency triage and management, and evaluation of acute self-limited problems. This rotation occurs in an institutional as opposed to a private setting. One or two courses. *Staff*

MED 152. Intensive Care. A four-week rotation that acquaints the student with the acute and intensive care required for patients who have undergone major and complex surgical procedures, suffered massive and severe trauma, cardio-respiratory collapse, or other life-threatening medical crises. Emphasis is placed on ventilatory assistance, cardiopulmonary resuscitation, fluid and electrolyte replacement, and acid-base balance under resident physician supervision. One course. *Staff*

MED 153. Cardiology. During the rotation students will become familiar with the presentation, evaluation, and management of cardiovascular disorders, includ-

ing acute and chronic problems. Students will gain experience performing the medical history and physical examination and will learn appropriate diagnostic procedures and therapeutic regimens, including drug therapy, alterations in life patterns (smoking, diet, exercise, etc.), and surgical intervention. One or two courses. *Cardiology staff*

MED 155. Endocrinology. A four- or eight-week rotation designed to acquaint the student with endocrinological diseases. The emphasis is placed on obtaining the defined endocrine data base and appropriate treatment of the disease. Students attend all daily rounds and conferences while on the service. They are taught the indications, limitations, and methods of performing diagnostic procedures including: glucose, tolbutamide, and arginine tolerance tests; thyroid function tests; and urinary steroid determinations. Students help educate patients with endocrine diseases about their disease processes, diagnostic evaluations, and therapies. One or two courses. *Endocrinology staff*

MED 156. Gastroenterology. During this four- or eight-week rotation students study the diagnosis, pathophysiology, and essentials of therapy of various gastroenterologic problems. They learn to perform and interpret the following diagnostic procedures: nasogastric intubations and gastric analyses (both with and without fluoroscopy), secretin tests, rectal and small bowel biopsies, proctoscopies, sigmoidoscopies, and gastroscopies. They also learn to care for endoscopic and biopsy instruments and biopsy specimens. One or two courses. *Gastroenterology staff*

MED 157. Hematology-Oncology. During this four- or eight-week rotation the students become familiar with the presentation of hematologic and oncologic problems, including many which are serious and life-threatening. A major objective for the student will be learning to relate supportively to the feelings and needs of terminally ill patients. The student will also gain experience with various diagnostic procedures, including white cell differential, bone marrow aspiration, lumbar puncture, paracentesis and thoracentesis. Students will become familiar with the principles of blood transfusion. One or two courses. *Hematology staff*

MED 159. Pulmonary Medicine. A four- or eight-week rotation that provides an indepth exposure to patients with respiratory conditions. The problems encountered by patients who have respiratory ailments are studied in detail as are the associated special history and physical examination techniques, diagnostic and therapeutic procedures. The student participates in daily rounds and teaching conferences on respiratory diseases and gains a knowledge of the therapeutic regimen, their indications, availability, reliability, and limitations in the treatment of respiratory and allergic diseases. One or two courses. *Pulmonary staff*

MED 160. Nephrology. During this four- or eight-week rotation, the student learns to gather and record information in a problem-oriented manner about patients with renal and hypertensive diseases. The student becomes able to recognize the effects of disease, therapy, and education on the patient's course and plays a major role in patient education. The fundamentals of renal function, urinalysis, radiography of the chest, urinary system and bones, and the principle of dialysis are covered. One or two courses. *Nephrology staff*

MED 161. Neurology. On this rotation, students learn about the presentation, evaluation, and management of patients with neurologic problems. The student develops an understanding of specialized history and physical techniques and diagnostic procedures, including electroencephalography, brain scan studies, pneumoencephalography, and central nervous system radiologic studies. Students also learn to relate supportively to patients whose symptoms may be frightening and/or have a serious prognosis. One or two courses. *Neurology staff*

MED 162. Rheumatology. This course provides the student with an indepth exposure to rheumatologic disease. Students gain insight into the psychosocial adjustments necessitated by chronic, potentially disabling disease. Students also gain familiarity with diagnostic procedures, therapeutic regimens, and learn how to do a meticulous and thorough joint examination. One or two courses. *Rheumatic and genetic diseases staff*

MED 163. Dermatology. During this rotation students gain familiarity with major classes of dermatologic diseases, ranging from acute self-limited problems to malignant conditions. Sensitivity to the negative effects of cosmetic disfigurement is stressed. Students gain experience with common diagnostic procedures and courses of treatment. One or two courses. *Tindall and dermatology staff*

MED 165. Clinical Infectious Disease. During this four-week rotation, the student learns to approach patients presenting with infectious diseases, to gather a data base from them, and to understand the manifestations of the illnesses and the rationale for therapy. One course. *Staff*

MED 191. Independent Study. This course is intended to allow students with particular interests in an area of internal medicine to structure a need-specific learning experience. Independent studies are arranged with the program staff and appropriate clinical faculty. One or two courses. *Staff*

MICROBIOLOGY

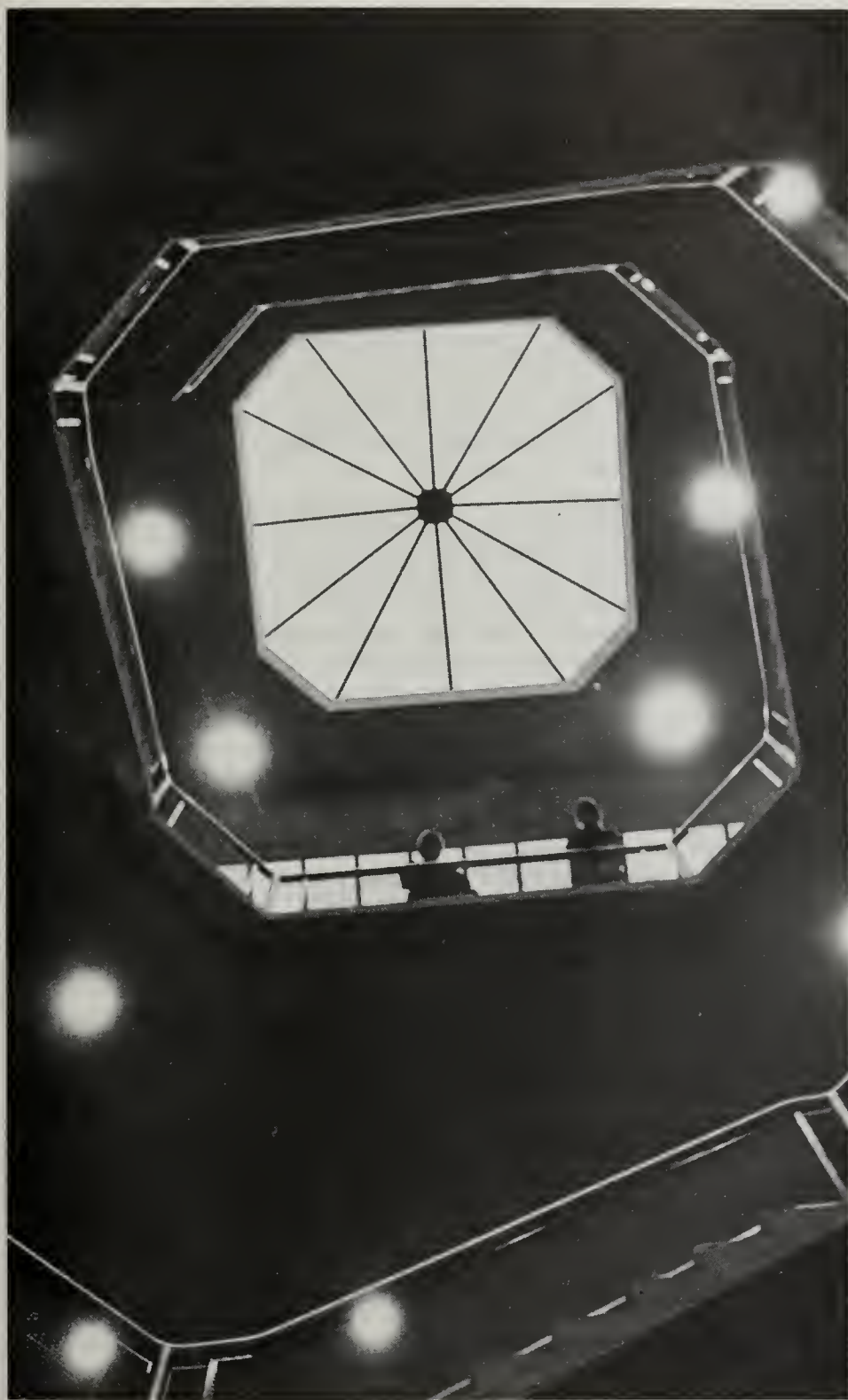
MIC 101. Introductory Microbiology. An introduction to diagnostic microbiology covering such topics as microbial morphology, staining characteristics, growth requirements, diagnostic tests, and antibiotic susceptibility testing. The clinical aspects of such subjects as pyogenic cocci, gram negative sepsis and nosocomial infection, meningitis, venereal disease, enteric infection, anaerobic pathogens, tuberculosis, mycotic diseases, viral infections, and the use of antibiotics are also included. One-half course. *Osterhout*

OBSTETRICS AND GYNECOLOGY

OBG 150. Obstetrics/Gynecology. During this rotation students learn about the health, needs, and concerns of women. Students learn about pregnancy, including prenatal care and management of labor and delivery. The student is expected to be fully familiar with the normal course of pregnancy and with common complications in order to provide educated and sympathetic support for the prospective mother. Students will also gain experience with common gynecologic concerns, including cancer detection, abnormal menstruation and bleeding, infections, and sexual dysfunction. Familiarity with the effectiveness, indications, and contraindications of various forms of contraception is a further objective. One or two courses. *Staff*

OPHTHALMOLOGY

OPH 150. Ophthalmology. This is a four- or eight-week rotation reviewing the major ophthalmologic disease. Through lectures, teaching rounds, and learning special history and physical examination techniques, the student develops an expertise in determining visual fields, visual acuity, and oculotometry. The principles of refraction and the many medical and surgical therapeutic regimens available for treating ophthalmologic disorders are included. The student is also required to participate in the routine care of ophthalmologic inpatients and outpatients. One or two courses. *Staff*



PATHOLOGY

PTH 115. Clinical Diagnostic Procedures. Students develop skills for performing routine hematologic, urinary, and microbiological procedures suitable for emergency or office/clinic practice. Lectures and discussions are concerned with clinical interpretation and appropriate applications of laboratory data and physiologic derangements which frequently produce abnormal laboratory values. Basic principles of electrocardiography are presented also. A \$50 laboratory fee is required. One course. *Widmann, Schmidt, and Long*

PEDIATRICS

PED 150. Community Pediatrics. The major objective of this rotation is to provide students with an overview of community pediatric practice. Students will gain familiarity with normal growth and development and developmental evaluation, pediatric preventive medicine, and evaluation and management of common childhood illnesses. Special emphasis is placed on communication skills and relating sensitively to both children and parents. Each student will spend time in the newborn nursery and be involved with hospitalized patients. One or two courses. *Herman-Giddens and staff*

PED 152. Intensive Care. A four-week rotation that acquaints the student with the acute and intensive care required for patients who have undergone major and complex surgical procedures, suffered massive and severe trauma involving multiple organ systems, or experienced sudden cardiorespiratory collapse or other life-threatening medical crises. Emphasis is placed on ventilatory assistance, cardiopulmonary resuscitation, fluid and electrolyte replacement, and acid-base balance under resident physician supervision. Prerequisite: PED 150. One course. *Staff*

PED 153. Pediatric Chest and Allergy. During this four- or eight-week rotation the student is taught to obtain a complete history and physical examination with emphasis on the allergy data base and the structure of the family. Students gain understanding of the impact of chronic illness on children and their families. They gain an understanding of home care programs and are able to alter them to fit a family's ability and resources. The student carries out appropriate diagnostic procedures and assesses the results for children with pulmonary disease. One or two courses. *Staff*

PED 154. Full-Term Nursery. During this four- or eight-week rotation the student learns to collect the maternal history accurately and completely; to recognize those maternal conditions imposing risks on the full-term infant; to collect samples for newborn screening laboratory exams; to examine a full-term infant and distinguish those who are abnormal from those who are normal; and to give cogent instructions to mothers and fathers regarding home care of the infant. One or two courses. *Staff*

PED 191. Independent Study. This rotation allows students with a particular interest in an area of pediatrics to construct their own need-specific learning experience. PED 191 is arranged with the program staff and appropriate clinical faculty. One or two courses. *Staff*

SURGERY

SUR 101. Fundamentals of Surgery. This course has been recently redesigned to better focus on the needs of P.A.'s in primary care settings. While including the basic concepts needed for P.A.'s to function well in a major surgical setting, the course emphasis is on building expertise in the areas of minor surgical techniques, emergency procedures, and the surgically related skills needed in

general medicine. Included in the lecture, laboratory, and skill sessions will be a wide variety of topics from anesthesia and asepsis to venipuncture. The students will learn first assisting, suturing, casting, various intubations, and will be certified in Basic CPR. The final eight weeks of the course will emphasize work in the Animal Surgery Laboratory. One course. *Hendrix and staff*

SUR 150. General Surgery. A four or eight-week rotation that exposes the student to a great variety of clinical problems, crossing, at times, many so-called specialty lines. Basic surgical principles, as well as insights into many of the surgical specialties, can be learned on this service. Preoperative diagnostic principles and postoperative management are emphasized. The most attractive feature of the rotation is the great diversity of surgical problems encountered. One or two courses. *Staff*

SUR 151. Surgical Outpatient/ER. During this four-week rotation, students become familiar with the evaluation and management of surgical problems of the ambulatory patient. In the emergency room, students gain experience in the initial evaluation of potential surgical conditions, particularly abdominal pain. Students learn to perform problem specific examinations and have an opportunity to evaluate patients on return visits. One course. *Staff*

SUR 152. Intensive Care. During this experience the student learns to: recognize patients requiring intensive medical care; operate and maintain life-monitoring equipment; understand and evaluate fluid electrolyte replacement and acid-base balance; and administer cardiopulmonary resuscitation and ventilatory assistance. This experience may be gained on the respiratory care unit, medical care unit, intensive care nursery, surgical acute care unit, and in pulmonary function-inhalation therapy. One or two courses. *Staff*

SUR 153. Cardiothoracic Surgery. During this rotation, the student learns to perform a detailed history and physical examination with special emphasis on the cardiothoracic system. With special help from the resident and senior staff and through reading, the student should be able to appreciate special diagnostic procedures such as angiograms, pulmonary function studies, etc. In the operating room, the student will assist and follow the conduct of various open-heart and other major thoracic procedures. The resident, senior staff, and student will participate in the management of complex problems such as various arrhythmias, shock, fluid and electrolyte imbalance. One or two courses. *Cardiothoracic surgery staff*

SUR 155. Surgical Acute Care Unit. During this rotation the student is acquainted with the postoperative care of patients who have undergone surgical procedures or suffered massive and severe trauma involving multiple organ systems. Special emphasis is centered on ventilatory assistance problems, open-heart cases, neurosurgical problems, and massive trauma cases. The variety of the patients and the diversity of the problems that exist on the unit give the student a broad insight into surgical postoperative management. The student should strive for an understanding of the pathophysiology and physiology. One or two courses. *Cardiothoracic division staff*

SUR 156. Otolaryngology. During this rotation students will learn to evaluate problems related to the ear, nose, and throat. Experience will include both ambulatory and hospitalized patients. Students will gain familiarity with various diagnostic and therapeutic procedures and will have an opportunity to follow patients over a period of time. One or two courses. *Division of Otolaryngology and staff*

SUR 157. Plastic Surgery. During this course students gain familiarity with patients requiring plastic repair including burn patients, and patients with facial anomalies and maxillofacial neoplasms. The course objectives include an under-

standing of preoperative and postoperative care, recording the initial history and physical examination, and ordering indicated laboratory tests and studies. It is hoped that the student will learn to respond sensitively to the emotional needs of this group of patients. One or two courses. *Division of Plastic Surgery and staff*

SUR 160. Urology. During this rotation, students learn about urologic disease. Students participate in the care of clinic and hospitalized patients with common urologic problems and take part in initial evaluations, diagnostic procedures, surgery, and acute and long-term follow-up care. One or two courses. *Division of Urology*

SUR 161. Neurosurgery. During this eight-week rotation the student is provided with a working understanding of the problems unique in the diagnosis, treatment, and management of the neurosurgical patient. The student may gain experience in the operating room by assisting with the patient, with instrumentation, and with the operative procedures. A working knowledge is gained of diagnostic techniques such as carotid arteriograms, electroencephalograms, ventriculograms, spinal taps, etc. Experience and knowledge in emergency room techniques and management of acute neurosurgical injuries (GSW, blunt head trauma, acute quadriplegia, hemiplegia, etc.) is included. One or two courses. *Division of Neurosurgery*

SUR 162. Orthopaedic Surgery. Students gain familiarity with the evaluation and management of common orthopaedic problems at the primary care level, including soft tissue injuries, fractures, arthritis, and low back pain. Students will learn the mechanism for applying different types of traction, how to apply splints and casts, and how to provide emergency care for acute trauma. One or two courses. *Orthopaedic Division*

SUR 191. Independent Study. This rotation allows students with a particular interest in an area of surgery to construct their own need-specific learning experience. SUR 191 is arranged with the program staff and appropriate clinical faculty. One or two courses. *Surgical staff*



Graduate Degree Programs



The Graduate School of Duke University awards a Master of Health Administration degree to students who complete the program in health administration and a Master of Science degree to students who complete the program in physical therapy. Both health administration and physical therapy are departments in the Graduate School and additional information, including courses of instruction, may be found in the Graduate School bulletin which is available through the Office of Admissions, Graduate School, Duke University, Durham, North Carolina 27706. Graduate programs are also integral parts of Duke University Medical Center.

Health Administration

Professors: Robert E. Taylor, Ph.D., *Acting Chairman*; E. Harvey Estes, M.D.; B. Jon Jaeger, Ph.D.; David G. Warren, J.D.

Associate Professor: David J. Falcone, Ph.D.

Assistant Professor: Donald S. Smith, M.H.A.

Adjunct Professors: W. Edward Hammond, Ph.D.; Robert E. Toomey, LL.D.

Adjunct Associate Professors: William L. Berry, D.B.A.; Robert G. Winfree, M.A.

Adjunct Assistant Professors: David B. Adcock, J.D.; William J. Donelan, M.H.A.; J. Kevin Moore, J.D.; Howard R. Veit, M.H.A.; Duncan Yaggy, Ph.D.

The Department of Health Administration offers a four-semester, two year graduate program leading to the Master of Health Administration degree, and participates in selected joint-degree programs.

The M.H.A. program prepares individuals for management careers in complex health care organizations such as multihospital systems and academic medical centers.

The curriculum is rigorous, emphasizing quantitative decision making, statistics, operations research, financial management and accounting, public policy, health law, and organizational behavior.

One class of approximately forty is admitted each year, to start in September. Admission is highly competitive, with many applications for each student enrolled. Selection is based on previous academic and professional work, Graduate Record Examination scores, recommendations, and personal interviews conducted on campus. Only applicants who show potential for demanding graduate study and leadership in the health field are selected. For further information write to the Admissions Coordinator, Department of Health Administration, Box 3018, Duke University, Durham, North Carolina 27710.

Tuition and Expenses. The 1986-87 academic year tuition for students enrolled

in the health administration program is \$9,800 for first-year students and \$8,800 for second-year students. Estimated cost for the two-year program is approximately \$31,000, including tuition and living expenses. Part-time students pay one-half the academic year tuition rate.

Financial Aid. A limited number of scholarships are available. All aid is on the basis of demonstrated financial need as described in the section on student aid in the chapter, "The Allied Health Programs."

Physical Therapy

Professor: Robert C. Bartlett, M.A., *Chairman*

Associate Professors: Eleanor F. Branch, Ph.D., *Director of Graduate Studies;* Elia E. Villanueva, M.A.

Assistant Professors: Grace C. Horton, B.S.; Pamela W. Duncan, M.A.C.T.

Assistant Clinical Professors: Elaine M. Eckel, M.A.; Mary Ellen Riordan, M.S.

Clinical Associates: Linda M. Lawrence, B.S.; Daniel Dore, M.P.A.

Adjunct Assistant Professor: Marcia Roses, M.A.

Adjunct Associates: Hazel Adkins, M.A.; Rebecca L. Craik, Ph.D.; Susan E. Harryman, M.S.;

Lois Ann Hodges, M.A.; Martha Propst, M.A.; Kathleen R. Riley, B.S.; Wadsworth D. Roy III, B.S.; Ronald W. Sweitzer, M.S.; Gail W. Vanderlaan, B.S.; Elizabeth T. Warren, B.S.

The Duke University Graduate Program in Physical Therapy, leading to the Master of Science degree, is a program for entry into the profession of physical therapy. The program is designed to provide a comprehensive foundation in the art and science of physical therapy, preparing individuals for clinical practice. Experiences in the areas of administration and research are also provided. Students may arrange their curricula to allow for the development of teaching skills.



Program of Study. The fully accredited program of study requires fifty-two credit units of graduate course work, research, clinical affiliation, or other equivalent academic experience, and is twenty-two consecutive months in length. Forty-two to forty-four units of work must be in physical therapy, five units in designated courses in anatomy, and the remaining three to five units in electives in related fields. A research project is required which provides the opportunity to pursue a particular aspect of physical therapy in depth.

Prerequisites for Admission. Requirements for admission to the physical therapy program include a baccalaureate degree, completion of prerequisite courses, Graduate Record Examination (GRE) Aptitude Test scores, the filing of an application, and, upon invitation, a personal interview. In order to meet the closing date of 1 January for the initial receipt of an application, it is strongly recommended that the GRE be taken no later than the October test date. All supportive documents must be received by the Graduate School Office of Admissions by 1 February and only completed applications are forwarded to the Graduate Program in Physical Therapy. Only students for full-time study are accepted. State of residency does not influence admission policies or tuition costs. Requests for applications and further information should be directed to the Director of Graduate Studies, Department of Physical Therapy, Box 3965, Duke University Medical Center, Durham, North Carolina 27710.

Tuition and Expenses. The 1986-87 academic year tuition for students enrolled in the Graduate Program in Physical Therapy is \$265 per credit unit. Estimated cost for the two-year program is approximately \$29,000, including tuition and living expenses.

Financial Aid. All students are encouraged individually to seek sources of financial assistance. Loan money may be available through the Duke University Medical Center. Financial aid applications are mailed to students after acceptance into the program. Please refer to the section on student aid in the chapter, "The Allied Health Programs."

Certificate Programs



Duke University Medical Center has responded to the increased need for qualified individuals at all levels in the health care system by developing educational programs designed to equip people for a variety of positions. These programs, which vary in admission requirements and length of training, offer students both clinical and didactic experience. Graduates of these programs are awarded certificates.

Clinical Psychology Internship

The Division of Medical Psychology, Department of Psychiatry, Duke University Medical Center, offers internship training in clinical psychology to students who are currently enrolled in APA-approved Ph.D. programs in clinical psychology and who have already completed three years of graduate study. The program, approved by the American Psychological Association, provides experience in many contexts with a wide diversity of patients. Internship training provides experience in the traditional activities of clinical psychologists: assessment, consultation, psychotherapy, and research. Those successfully completing the requirements for internship will be awarded a Duke University Medical Center certificate. Requests for additional information and correspondence concerning admission to the program should be directed to the Director, Clinical Psychology Internship Program, Box 3253, Duke University Medical Center, Durham, North Carolina 27710.

Cytotechnology*

Professor: William W. Johnston, M.D., *Director, Cytotechnology Program*

Associate Professor: Sandra H. Bigner, M.D.

Assistant Professor: Cheryl Szpak, M.D.

Teaching Staff: Rosiland M. Wallace, A.B., *CT(ASCP), Teaching Supervisor*; Susan P. Moore, B.A., *CT(ASCP), Instructor*

Progress in the early detection of cancer by the microscopic examination of smears of cell samplings, especially from the female genital tract, has resulted in the specialty of cytotechnology. The cytotechnologist deals with the technical and diagnostic aspects of exfoliative cytology. Graduates of the program are awarded a certificate and are eligible to take the certifying examination given by the Board of Registry of the American Society of Clinical Pathologists.

Program of Study. The twelve-month program beginning in early September

*Subject to change without prior notice.

consists of two parts: the first half is primarily devoted to theoretical and practical exercises in the techniques of exfoliative cytology and interpretation of the clinical material; the last half is composed of laboratory training in all aspects of exfoliative cytology.

Prerequisites for Admission. All applicants shall have completed two years (sixty semester-hours or ninety quarter-hours) of academic education in an accredited college or university before being accepted into this school. This preparatory work must include a minimum of fourteen semester-hours or twenty-one quarter-hours of biology. These may include courses in general biology, bacteriology, parasitology, physiology, anatomy, histology, embryology, zoology, and genetics. An applicant presenting a baccalaureate degree from an accredited college or university must have completed the biology requirements before admission. Biology credits earned more than seven years prior to application must be updated by taking three additional semester credits related to cell biology within a period of time not to exceed twelve months prior to admission. Priority will be given to individuals with a Bachelor of Science or Bachelor of Arts degree or to ASCP registered medical technologists.

Application Procedures. Applications must be submitted by 1 April of the year for which admission is requested and must contain the following:

1. a completed application form including a \$30 nonrefundable fee;
2. official transcripts from all colleges or professional schools attended;
3. one copy of all transcripts must be submitted by the applicant to the National Accrediting Agency for Clinical Laboratory Sciences for approval;
4. two letters of recommendation from individuals acquainted with the applicant's educational or professional experience; and
5. a personal interview prior to final acceptance.

All applicants will be notified by 1 May regarding admission to the program. Requests for further information and application forms should be directed to the Program Director, Cytotechnology Program, Department of Pathology, Duke University Medical Center, Durham, North Carolina 27710.

Fees and Expenses. On notification of acceptance, students are required to pay a nonrefundable registration fee of \$25. This fee will be applied towards the year's course fee of \$1,575. The Student Health fee is \$303 per year. Students are responsible for housing, board, uniforms, books, and insurance.

Financial Aid. See the section on student aid in the chapter, "The Allied Health Programs."

Electrophysiology Technology

Medical Director: Darrell V. Lewis, M.D.

Program Director: Linda Ollis, B.S., R.EEG T.

Clinical Coordinator: Linda Quinlivan, R.EEG T.

Professor: C. W. Erwin, M.D.

Associate Professor: Michael R. Volow, M.D.

Assistant Professors: Rodney A. Radtke, M.D.; Richard Weiner, M.D.

Evoked Potential Instructor: Andrea Erwin, B.A.

Instructional Staff: Neurology residents and laboratory staffs at Duke and the Durham VA Medical Centers and Epilepsy Centers

The Electrophysiology Technology Program is sponsored by the Division of Neurology, Department of Medicine, Duke University Medical Center. A major part of the course involves training in EEG (electroencephalography) and EP (evoked potential) technology. Other areas to which the student is exposed include electrocardiography, electromyography, and EEG research. Approximately eight

students are accepted into the program each session. A class will begin in September 1986 and finish in late November 1987. The next class will begin in March 1988 and finish in late May 1989. Upon successful completion of the fifteen-month program, graduates are awarded a certificate and are eligible to take the certifying examination given by the American Board of Registration of Electroencephalographic Technologists.

Program of Study. The program consists of fifteen months of classroom instruction and clinical training. Approximately two hours per day are spent in the classroom. The remainder of each day is spent in clinical sites at Duke University and the Durham VA Medical Center.

Prerequisites for Admission. Applicants must have a high school diploma. Applicants who had a science-oriented high school curriculum and/or some college experience will receive priority.

Application Procedures. Applications must be received by 1 June of the years for which classes begin in September and by December 1 of the years in which classes begin in March. Applications must contain the following:

1. a completed application form;
2. results of the Scholastic Aptitude Test from the College Entrance Examination Board (CEEB);
3. official high school and/or college transcripts;
4. at least three letters of recommendation from individuals not related to the applicant—one from an individual acquainted with the applicant's character and the others from those acquainted with the applicant's educational or professional experience.

All applicants are notified by 15 July (or 15 January of alternate years) regarding admission to the program. Requests for further information and application forms should be directed to the Program Director, EEG Laboratory, P.O. Box 3948, Duke University Medical Center, Durham, NC 27710.

Fees and Expenses. A fee of \$1,325 is required of all students enrolled in the program. An additional nonrefundable fee of \$30 for processing the application, payable to Duke University Medical Center, must accompany the application. Students do not pay full Duke tuition. Students must furnish their own uniforms. In addition, books cost approximately \$200. The Student Health fee is \$303 per year.

Financial Aid. Please refer to the section on student aid in the chapter, "The Allied Health Programs."

Hospital and Clinical Pharmacy Residency

Director of Pharmacy Services: Milton W. Skolaut, B.S.

Associate Director of Pharmacy Services: James C. McAllister, M.S.

Assistant Director for Clinical Services: Christine Rudd, Pharm.D.

Coordinator for Residency Training: Richard H. Drew, B.S. Residency Program.

The Hospital and Clinical Pharmacy Residency is a twelve-month postbaccalaureate program conducted by the Department of Pharmacy at the Duke University Medical Center. The residency is designed to give the graduate pharmacist extensive training in clinical pharmacy practice and basic hospital pharmacy services including unit-dose drug distribution, large and small parenteral admixture service, total parenteral nutrition program, controlled drug systems, and hospital pharmacy administration.

Admission Standards. Applicants must be graduates of accredited schools of pharmacy and must have a B.S., M.S., or Pharm.D. degree. Resident candidates

must have demonstrated good academic and leadership capabilities and be eligible for licensure in North Carolina. It is preferable that the applicant have previous hospital pharmacy experience.

Application Procedures. Applications must be submitted by 30 January of the year for which admission is requested and include the following:

1. ASHP resident matching program registration by the preceding 15 December;
2. personal interview, to be arranged by appointment;
3. official transcript from pharmacy school and other professional programs attended;
4. completed Allied Health Division application forms; and
5. letters of recommendation from at least three persons who have known the applicant professionally (i.e., pharmacy school professor, hospital pharmacist, clinical pharmacist).

Applicants will be notified by 30 March regarding admission to the program. Requests for further information and application forms should be directed to the Coordinator for Residency Training, Box 3089, Duke University Medical Center, Durham, North Carolina 27710.

Stipend. A stipend of \$15,000 is granted for the twelve-month residency.

Travel Allowance. A travel allowance of \$350 is granted for the twelve-month residency.

Medical Technology

Chairman, Department of Pathology: Robert B. Jennings, M.D., *James B. Duke Professor of Pathology*

Director of Hospital Laboratories: Kenneth A. Schneider, M.D., *Professor of Pathology*

Medical Director, Medical Technology Program: Frances K. Widmann, M.D., *Associate Professor of Pathology*

Program Director, Medical Technology Program: Margaret C. Schmidt, M.A., MT(ASCP), SH, CLS(NCA) *Associate in Pathology*

Assistant Program Director, Medical Technology Program: Cynthia L. Wells, Ed.D., MT(ASCP), CLS(NCA)

Education Coordinators, Medical Technology Program: Kenni B. Beam, M.S., MT(ASCP), SM, CLS(NCA); Michael L. Bishop, M.S., MT(ASCP), CLS(NCA); Iris W. Long, B.S., MT(ASCP), SH, CLS(NCA)

Professor: John A. Koepke, M.D.

Associate Professors: Dolph Klein, Ph.D.; Thomas G. Mitchell, Ph.D.; Peter Zwadyk, Ph.D.

Assistant Professors: William H. Briner, B.S.; Robert H. Christenson, Ph.D.; Jane T. Gaede, M.D.; Robert L. Habig, Ph.D.; Emily Reisner, Ph.D.; Frank Sedor, Ph.D.; Marcus B. Simpson, Jr., M.D.; John Toffaletti, Ph.D.

Associate: John A. Bittikofer, Ph.D.

Instructors: Lee A. Barbieri, B.S., MT(ASCP); Enrique Estevez, Ph.D.; Lizzie Harrell, Ph.D.; Robert F. Wildermann, C(ASCP)M.S.

Clinical Teaching Staff: Billy H. Abrams, B.A., MT(ASCP); Judith P. Adams, B.S., MT(ASCP); Marilyn Alexieff, B.A., MT(ASCP); Barbara Benton, B.S.; Mary Lee Campbell, B.S., MT(ASCP)SBB; Julie Claydon, B.S., MT(ASCP); Betty R. Crews, B.S., MT(ASCP); Jean T. Crute, B.S., MT(ASCP); Mary Ann Dotson, B.S., MT(ASCP); Priscilla L. Farmer, B.S., MT(ASCP); Lisa A. Fracica, M.M.Sc., RM(AAM); June Gregonis, B.S., MT(ASCP); Samuel E. Hargraves, B.S., NRCC; Cathy Holleman, M.S., MT(ASCP)SC; Kathryn Kirvan, B.S., MT(ASCP); Freda Kohan, B.S., MT(ASCP), SM; Ellen Lundberg, B.S., MT(ASCP); Elizabeth Mayo, B.S., MT(AMT); Beverly S. Oxford, B.S., MT(ASCP)SC; Ann Padgett, B.H.S., MT(ASCP)SM; Ruth Parrish; Margaret Pollard, B.S., MT(ASCP); Wiley Schell, M.S.; Mary S. Smith, MT(HEW); Charles E. Stewart, B.H.S., MT(ASCP); Gail Vesilind, B.S., MT(ASCP), SBB; Irene A. Wyatt, B.S., MT(ASCP)

Affiliate Institution Advisers: Robert K. Reid, Ph.D., *Meredith College*; Marsha E. Fanning, Ph.D., *Lenoir-Rhyne College*; Stephen R. Nohlgren, Ph.D., *Salem College*; Eileen Gregory, Ph.D., *Rollins College*; Francis M. Knapp, Ph.D., *Stetson University*; Grover C. Miller, Ph.D., *North Carolina State University*; Steven Chalgren, Ph.D., *Radford University*; Jeffrey Sich, Ph.D., *University of Tampa*.

Program of Study. The educational program begins 1 June and consists of fifty-six instructional weeks plus three weeks of vacation. The first twelve weeks consist of a core curriculum of clinical pathology courses offered to all students at the same time. After successful completion of the core curriculum, the student is eligible to begin forty weeks of clinical rotations in the Medical Center laboratories. In the spring, a four-week term is devoted to a course of study in educational techniques, management and supervision, computers in laboratory medicine, and other clinical laboratory sciences. Lectures, student laboratory experience, and clinical laboratory instruction are presented by a faculty and staff of physicians, chemists, microbiologists, and medical technologists.

Graduates of this CAHEA-accredited program are eligible for national certification as a medical technologist. Career opportunities in hospital laboratories, research, public health facilities, and educational institutions are widely available. This program is formally affiliated with Meredith College, Raleigh, North Carolina; Lenoir-Rhyne College, Hickory, North Carolina; the University of Tampa, Tampa, Florida; Salem College, Winston-Salem, North Carolina; Stetson University, Deland, Florida; North Carolina State University, Raleigh, North Carolina; and Radford University, Radford, Virginia to provide the 3 + 1 study format toward a degree from these institutions. A cooperative agreement exists with Rollins College, Winter Park, Florida, to channel 4 + 1 Rollins students to this program.

Prerequisites for Admission. Applicants to the program must possess the following academic prerequisites:

1. Possession of a baccalaureate degree, OR the completion of at least three years of study in an accredited college or university which totals ninety semester hours (120 quarter hours) with grades of C or better, and the written guarantee that a baccalaureate degree will be conferred by a university after successful completion of this program.
2. Sixteen semester hours (twenty-four quarter hours) of chemistry (including at least one course in organic chemistry). Quantitative analysis may be accepted in lieu of the second semester of organic chemistry.
3. Sixteen semester hours (twenty-four quarter hours) of biology (including one course in microbiology).
4. One course of college level mathematics.

Application Procedures. A completed application file contains the following:

1. The completed Duke University Medical Center Allied Health application form, including a nonrefundable processing fee;
2. Official transcript(s) from all colleges and universities attended;
3. Three letters of recommendation, one from a professor of biological sciences, one from a professor of chemistry, and one from a college adviser;
4. A personal interview with members of the Admissions Committee, if requested, following the receipt of the application and other information;
5. A written statement of interest in medical technology;
6. A NAACLS transcript evaluation, if requested.

The deadline for applications is 1 April of the year for which admission is requested. It is strongly recommended that applications be submitted by 15 February to receive timely consideration. Applications received after 15 February will be considered on a space-available basis. Applicants will be notified no later than 1 May regarding admission to the program. Requests for further information and application forms should be directed to the Medical Technology Program, Box 2929, Department of Hospital Laboratories, Duke University Medical Center, Durham, North Carolina 27710.

Fees and Expenses. Tuition for the program is \$2,325.* A minimal lab fee is charged for the core curriculum. The student is responsible for housing, board, uniforms, books, and student health fee and medical insurance.

A nonrefundable deposit of \$175 is required of all accepted candidates to hold their place in the class. This deposit applies toward the tuition fee. The remaining tuition and fee balance is billed in two increments; at matriculation and in January (mid-year).

Transportation Required. The use of facilities other than Duke and Durham Veterans Administration Medical Centers requires transportation. It is the responsibility of each medical technology student to provide a means of transportation to and from the facilities selected for learning experiences. Although a few sites may be within bicycling distance, most are not.

Financial Aid. Please refer to the section on student aid in the chapter, "The Allied Health Programs." All candidates are urged to seek independent sources of financial assistance.

Part-time Employment. Students who wish to work are eligible to compete for available part-time paid positions within Hospital Laboratories after successful completion of the core curriculum to a maximum of 19.9 hours per week.

Courses of Instruction. Students must complete the following courses:

Core Curriculum†

<i>Course Title</i>	<i>Lect/Lab</i>	<i>Clock Hours</i>
MT 103	Introduction to Clinical Laboratory Sciences	25/8
MT 112A	Fundamental Principles of Instrumentation	40/40
MT 120	Immunohematology	42/24
MT 121A	Fundamental Principles of Blood and Body Fluids	36/54
MT 123	Principles of Immunology	22/00
MT 132	Medical Microbiology/Serology	37/32

†Course work in the core curriculum must be successfully completed to gain access to clinical rotation courses which follow.

Clinical Rotations and Courses

<i>Course Title</i>	<i>Lecture</i>	<i>Clock Hours</i>	<i>Total Rot. Weeks</i>
MT 151	Clinical Microbiology/Serology	—	11
MT 153	Clinical Immunology-Immunohematology	—	9
MT 155	Clinical Blood and Body Fluids	—	9
MT 157	Clinical Chemistry	—	11
MT 107	Human Pathology	27	—
MT 112B	Biochemistry of Disease	40	—
MT 113	Quality Assurance in Health Care	20	—
MT 114	Clinical Laboratory Futures	36	—
MT 121B	Pathology of Blood and Body Fluids	40	—

<i>Spring Term</i>	<i>Lect/Lab</i>	<i>Clock Hours</i>
MT 110	Medical Applications of Computers	12/00
MT 122	Parasitology	8/16
MT 124	Educational Techniques for the Health Professional	20/00
MT 126	Laboratory Supervision and Management	24/00

Ophthalmic Medical Technician

Professor: W. Banks Anderson, M.D., *Medical Director*
 Assistant Clinical Professor: Judy H. Seaber, Ph.B., *Program Director*
 Teaching Staff: Barbara Suitt, R.N., *COT, Clinical Coordinator*

*Subject to change without prior notice.

The ophthalmic medical technician program is sponsored by the Department of Ophthalmology, Duke University Medical Center. This is a one-year certificate course designed to prepare the student to perform adequately as an ophthalmic medical technician. The program consists of didactic lectures designed to provide the basic clinical background necessary for the student to understand and perform the technical tasks designated to them by an ophthalmologist. The educational program begins 1 July, and consists of forty-nine weeks of instruction with three weeks of vacation. The core curriculum will be covered within the first six months supplemented by clinical experience under close supervision of clinical support staff and faculty. The second half of the program will consist of clinical rotations with the student working under the close supervision of qualified clinical support staff and faculty and evaluated on a routine basis as their skills develop.

Upon satisfactory completion of the course, students will receive certification from Duke University Medical Center. Following one year of work experience graduates are eligible to sit for national certification examination by the Joint Commission of Allied Health Personnel in Ophthalmology at the level of an ophthalmic medical technician.

Prerequisites for Admission. Applicants to the program must have two years of college or the equivalent.* Priority will be given to students with a college degree or extensive work experience in some field of ophthalmology.

Application Procedures. Applications must be received by 1 May of the year for which admission is requested and must contain the following:

1. the completed Duke University Medical Center Allied Health application form, including a non-refundable processing fee;
2. official transcript(s) from all colleges and universities attended;
3. three letters of recommendation;
4. a personal interview with members of the admissions committee may be requested following receipt of the application and other information.

The deadline for applications is 1 May of the year for which admission is requested. It is strongly recommended that application be submitted as early as possible. Applicants will be notified no later than 1 June regarding admission to the program. Requests for further information and application forms should be directed to the Program Director, Judy H. Seaber, Ph.D., Box 3802, Duke University Eye Center, Durham, North Carolina 27710.

Fees and Expenses. Tuition for the program is \$2,400. The student is responsible for housing, board, purchase of white coats, books and student health fee and medical insurance. Fifty percent of the tuition is due at matriculation with the balance being due in January.

Transportation Required. It may be necessary for students to rotate at clinical sites other than at Duke University Medical Center and transportation may be necessary. It is the responsibility of the student to provide a means of transportation to and from the facility, selected for learning experiences.

Financial Aid. Financial aid through state and federal programs is not available through 1987. All candidates are urged to seek independent sources of financial assistance.

Courses of Instruction. Students must satisfactorily complete the following courses. The curriculum will include but will not be limited to the following:

*Decided by the admissions committee on an individual basis.

<i>Course Title</i>	<i>Clock Hours</i>
Basic Science Lecture	200
Visual Acuity Assessment	10
Physiology and Anatomy of the Eye	20
Physical History	9
Cardiopulmonary Resuscitation	16
Instrument Maintenance	5
Visual Fields	40
Optics	40
Spectacles	10
Anatomy	10
Glaucoma	16
External Diseases	8
Physiology	12
Contact Lens	14
Ocular Motility	15
Neurology	5
Practicums, Clinical I, II, III, IV, V	TBA
TOTALS	430

Pastoral Care and Counseling

Associate in Instruction: Peter G. Keese, S.T.B., Th.M., *Director of Clinical Pastoral Education Programs*

Associates in Instruction: P. Wesley Aitken, B.D., Th.M.; David M. Franzen, B.D., Th.M.

Professor: Richard A. Goodling, B.D., Ph.D.

Associate Professor: Paul A. Mickey, B.D., Ph.D.

A graduate program in pastoral care and counseling is available to clergy and sympathetic laity of all religious groups. There are four program options: a single unit of clinical pastoral education, an internship, a residency, and a fellowship. All are designed to train ordained individuals who desire to specialize in pastoral care and counseling, enhance their skills as parish clergy, or to broaden their understanding. Those who enroll in the program will be required to serve as chaplains in the Medical Center. All program options are approved by the Association for Clinical Pastoral Education, Inc.

Programs of Study. The following programs in basic, advanced, and supervisory clinical pastoral education are offered at the Duke University Medical Center:

Single Unit of Basic CPE. The single unit is offered during the summer months, beginning in June and lasting ten to twelve weeks (dates to be specified). It is also offered on a part-time basis concurrently with the fall and spring semesters of Duke Divinity School (the fall/spring extended unit). Admission to the single unit of basic CPE is based on the following:

1. submission of written application materials;
2. admission interview by a qualified examiner;
3. acceptance by the center.

*Clinical Internship (Basic CPE).** The internship usually begins in June or September and lasts for twelve months (dates to be specified). This program grants four units of CPE credit with the ACPE. Admission is based on the following:

1. graduation from college—equivalence may be considered;
2. evidence of serious religious and theological interest;
3. completion and supervisor's evaluation of one certified unit of CPE (basic unit) in an accredited center usually strengthens the application;

*Students who are taking more than two courses (not including CPE) in the Divinity School for academic credit will receive only three certified units of CPE—one in the summer, one in the fall, and one in the spring. All others receive four units of certified CPE. Beginning and ending dates vary according to the needs of the trainee and the program.

4. submission of written application materials;
5. a personal interview with the supervisory and teaching staff;
6. acceptance by the center.

*Clinical Residency (Advanced CPE).** The residency usually begins in September and lasts twelve months. The specialization of the advanced year may be in a number of clinical settings. Four units of CPE credit are granted with the ACPE. Admission is based on the following:

1. adequate ministry formation/development and experience in ministry which indicates readiness for Advanced CPE;
2. submission of written application materials;
3. a personal interview with the supervisory and teaching staff;
4. acceptance by the center.

*A Fellowship in Supervisory CPE.** Supervisory CPE provides a learning opportunity for the qualified person, with demonstrated personal, professional, and clinical competence who desires to become a certified supervisor of CPE. Admission to this program is based on his/her potential to assist others in the clinical methods of learning, together with a capacity to acquire techniques and theories of supervision. Admission to supervisory CPE is based on:

1. ecclesiastical endorsement;
2. a period of time which allows the candidate to demonstrate his/her ability to function pastorally, usually not less than three years;
3. completion of program objectives of basic and advanced CPE, usually at least four units of CPE;
4. consultation by the appropriate committee in the region with respect to his/her readiness to pursue supervisory training;
5. submission of written application materials;
6. a personal interview with the supervisory and teaching staff;
7. acceptance by the center.

Beginning and ending dates vary according to the needs of the trainee and the program.

Requests for application and further information about any of the programs should be directed to the Director, Clinical Pastoral Education Programs, Box 3112, Duke University Medical Center, Durham, North Carolina 27710.

Fees and Expenses. A fee is usually charged for the screening (admission) interview. In our region of the ACPE, Mid-Atlantic, the fee is \$35. The fee varies from place to place throughout the nation. All students who take clinical pastoral education at Duke Medical Center must be accepted and enrolled through either the Duke University School of Medicine or Duke Divinity School.

Students who wish to receive academic credit shown on a transcript should apply for admission to Duke Divinity School as a degree candidate (M. Div. or Th.M.) or as a special student. They will then enroll for CPE through Duke Divinity School and will pay fees to the Divinity School according to Divinity School charges. Residents in pastoral counseling are required to be enrolled through the Divinity School for one semester.

All other students must be enrolled through the Duke University School of Medicine, whether for single units or year-long programs. For 1986-87 fees are \$250 per unit. The Student Health fee is \$303 per year.

Financial Aid. A limited number of training stipends is available for the internship, residency, and fellowship. No stipends are available for the single unit of training.

Physician Assistant

A limited number of students who are not eligible for admission to the Bachelor of Health Science degree program, but who possess outstanding credentials in a health care field, are accepted into the certificate program. The two-year program, including tuition, is the same as that described previously. Students are issued a Duke University undergraduate identification card and are granted the same privileges as the physician assistant students in the Bachelor of Health Science degree program. Prerequisites for admission differ in that applicants not planning to receive the degree need not complete sixty semester hours of college level courses. Also, these applicants must submit their high school transcript(s); transcripts from diploma nursing or other health professional schools and military training programs; must complete by 15 January a college level course in both general chemistry and general biology; and must complete, also by 15 January, two years of health care experience.

Specialist in Blood Bank Technology

Chairman, Department of Pathology: Robert B. Jennings, M.D., *Professor of Pathology*
Director of Hospital Laboratories: Kenneth A. Schneider, M.D., *Professor of Pathology*
Medical Director Specialist in Blood Bank Program: Marcus B. Simpson, M.D., *Assistant Professor of Pathology*
Program Director, Education Coordinator, Specialist in Blood Bank Program: Denise Y. Rodio, MT(ASCP) SBB
Program Instructors: Tabbie Bolk, MT(ASCP) SBB; Gail Vesilind, MT(ASCP) SBB; Mary Lee Campbell, MT(ASCP) SBB
Professors: John A. Koepke, M.D.; Wendell K. Rosse, M.D.
Associate Professor: Frances K. Widmann, M.D.
Assistant Professor: Emily G. Reisner, Ph.D.
Associate: Margaret C. Schmidt, M.A., MT(ASCP) SH, CLS(NCA)
Instructors: Cynthia L. Wells, Ed.D., MT(ASCP), CLS(NCA); Robert F. Wildermann, M.A., C(ASCP)
Triangle Center Red Cross Instructors: Donald Bennett, MT(ASCP); Ann Califf, MT(ASCP) SBB

The Transfusion Service in the Department of Hospital Laboratories of the Duke University Medical Center offers a twelve-month program in advanced blood bank technology. This program is accredited by the American Association for Blood Banks and the American Medical Association's Committee on Allied Health Education and Accreditation (CAHEA). It is designed to give experience in administration, supervision, teaching, technical consultation, and research. Upon satisfactory completion of the course work, the student is awarded a certificate and is eligible for national certification as a Specialist in Blood Bank Technology. Career opportunities in hospital blood banks and transfusion services, independent blood centers, research and development laboratories, sales and marketing positions, and educational institutions are widely available.

Program of Study. The educational program begins on the last Monday of January and consists of fifty-two instructional weeks including two weeks of vacation. The first week is an orientation period which leads into the clinical rotations at the Medical Center and at the Triangle Center Red Cross. Each Wednesday is devoted to didactic coursework, discussion groups, and counseling sessions. Instruction is provided by the faculty and staff of the Medical Center.

Prerequisites for Admission. Applicants to this program shall possess a baccalaureate degree which includes sixteen (16) semester hours (twenty-four quarter hours) of biological science (with one semester in microbiology); sixteen (16) semester hours (twenty-four quarter hours) of chemistry (with one semester in organic or biochemistry); and one semester (one quarter hour) of mathematics.

Prior experience in hospital blood banking is desirable. The directors of the program will rule on the acceptability of the work experience.

Application Procedures. Applications should be submitted by 1 August, and must contain the following:

1. A completed Duke University Medical Center Allied Health application form, including a nonrefundable processing fee;
2. Two copies of the American Association of Blood Banks Educational Program for Specialist in Blood Bank Technology application form;
3. A notarized copy of the certificate from the certifying agency;
4. Official transcripts from all colleges and universities attended;
5. Three letters of recommendation, one from a present employer (or immediate past employer if not currently working), and two from the following: education coordinator of the laboratory education program, laboratory supervisor, college adviser, or college professor in the natural sciences.
6. A written statement of interest in further education in blood banking and this program;
7. A personal interview with members of the Admissions Committee, if requested, following the receipt of the application forms and other requested information.

Requests for information and application forms should be directed to the Education Coordinator, Specialist in Blood Bank Program, Box 2929, Duke University Medical Center, Durham, North Carolina 27710.

Fees and Expenses. Tuition for the program is \$2,000,* payable in two installments, at matriculation and in September. The Student Health fee is \$303 per year. The student is responsible for housing, board, books, student health fee, and insurance.

Financial Aid. Each student accepted into the SBB program is eligible to receive funding from the department. The amount of funding will be determined on a yearly basis. Please also refer to the section on student aid in the "The Allied Health Programs" chapter.

Courses of Instruction. Students must complete the following courses and clinical rotations:

<i>Course Title</i>	<i>Contact Hours</i>
SBB 101A Immunology	20
SBB 101B Genetics	18
SBB 102A Coagulation, Component Therapy	23
SBB 102B Hematology	11
SBB 103 Human Blood Groups	39
SBB 104 Special Topics in Blood Banking	18
SBB 105 Quality Assurance	9
SBB 106 Educational Techniques	18
SBB 107 Management/Supervision	18
SBB 108 Seminars in Transfusion Medicine	50
SBB 109 Clinical Laboratory Rounds	150

<i>Clinical Rotations</i>	<i>Weeks</i>
SBB 110 Transfusion Service/Compatibility Laboratory	16
SBB 111 AABB Accredited Immunohematology Reference Laboratory	16
SBB 112 Coagulation	1
SBB 113 HLA Laboratory	2
SBB 114 Triangle Center Red Cross	10
SBB 115 Research	5

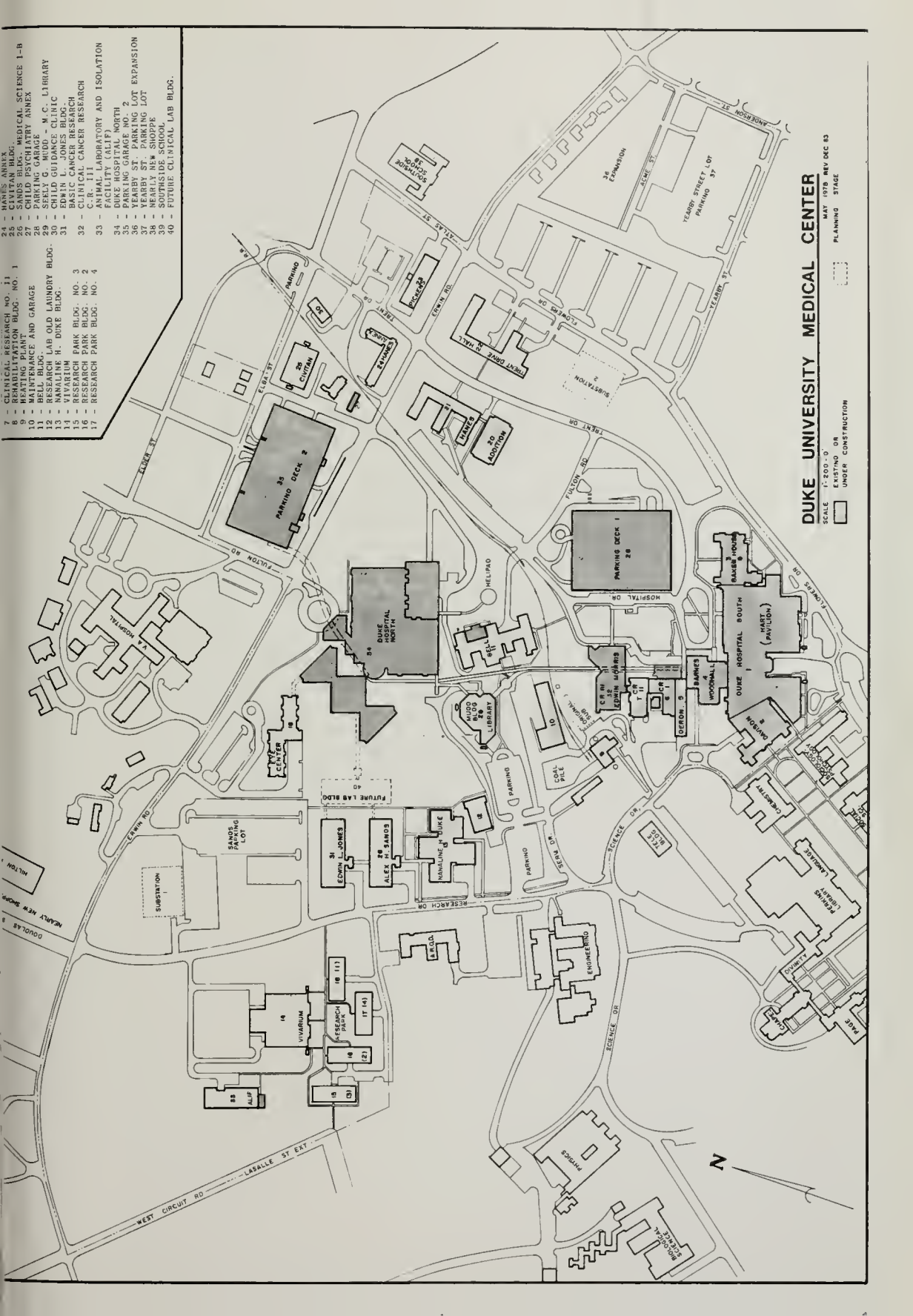
*Subject to change without prior notice.



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DUKE UNIVERSITY MEDICAL CENTER

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1986-87

The School of Law



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Duke University

1986-87

The School of Law

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The information in this bulletin applies to the academic year 1986-87 and is accurate and current, to the extent possible, as of June 1986. The University reserves the right to change programs of study, academic requirements, teaching staff, the calendar, and other matters described herein without prior notice, in accordance with established procedures.

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Calendar of the School of Law 1986-87

Summer Session

1986

June	
2	Monday, Tuition due, registration materials mailed
7	Saturday, Orientation for summer entrants
9	Monday, First day of class
July	
4-6	Recess for research and writing
August	
9	Saturday, Last writing deadline
13	Wednesday, Final examination
16	Saturday, Final examination

Fall Semester

1986

August	
11	Tuition due for entering students; registration materials mailed
21	Thursday, First day of class for upperclass students
23	Saturday, Orientation for entering students
25	Monday, First day of classes for first year students
October	
20-24	Reading and writing for fall-entering first-year students; recess and placement travel for upperclass students; vacation for summer-entering first-year students
November	
24-26	Recess for reading and writing for first-year students
27-28	Thanksgiving recess
December	
5	Friday, Last day of class for upperclass courses
8-20	Reading and examinations for upperclass students; first-year class schedule modified to minimize conflict
12	Friday, Last day of class for first-year students
15-22	Reading and examinations for first-year courses

Spring Semester

1987

January	
5-9	First-year students meet Professional Advocacy
8	Thursday, First day of class for upperclass courses
10	Saturday, Examination in Professional Advocacy
12-14	First-year recess for research and writing on Advocacy assignments
15	Thursday, First day of class for first-year courses taught in the spring semester only
19	Monday, Continuing first-year courses resume
March	
9-13	Recess for reading, writing, and placement travel
April	
22	Wednesday, Last day of classes
23	Thursday, Reading and examination period begins
May	
9	Saturday, Examination period ends
10	Sunday, Commencement

University Administration

H. Keith H. Brodie, M.D., *President*
Phillip A. Griffiths, Ph.D., *Provost*
William G. Anlyan, M.D., D.Sc., *Chancellor for Health Affairs*
Eugene J. McDonald, LL.M., *Senior Vice-President, Administration, and University Counsel*
Joel L. Fleishman, LL.M., *Vice-President*
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William L. Green, Jr., A.B., *Vice-President for University Relations*
William J. Griffith, A.B., *Vice-President for Student Affairs*
John J. Piva, Jr., B.A., *Vice-President for Alumni Affairs and Development*
Ms. Patricia C. Skarulis, M.A., *Vice-President for Information Systems*
John F. Adcock, M.B.A., *Corporate Controller*
Ms. N. Allison Haltom, A.B., *Secretary of the University*
Charles T. Clotfelter, Ph.D., *Vice-Chancellor of the University*
Andrew G. Wallace, M.D., *Vice-Chancellor for Health Affairs*

Law School Administration

Paul D. Carrington, *Dean*
Horace B. Robertson, Jr., *Senior Associate Dean*
Gwynn T. Swinson, *Assistant Dean for Student Affairs and Admissions*
Evelyn M. Pursley, *Assistant Dean for Alumni and Development*
Judith A. Horowitz, *Assistant Dean for International Studies*
Richard A. Danner, *Director of the Law Library*
Mary A. Monroe, *Director of Budget and Personnel*
Cynthia A. Peters, *Associate Director of Placement*
Margaret W. Cates, *Coordinator for Development*
Charanne C. Clarke, *Associate Director for Research and Support Services*
Mary T. Hawkins, *Financial Aid Counselor*
Sally M. Alston, *Staff Specialist, Records*
Janse T. Conover, *Staff Assistant to the Dean*
Patricia M. Delaney, *Staff Assistant, Admissions*
Mary Jane Flowers, *Staff Assistant for Publications*
Sarah F. Roberts, *Staff Assistant to the Director of the Library*





Altruism combined with realism; knowledge of fundamental principles and capacity to apply them; courage to insist on the right and patience to achieve it; understanding of the timidity of the weak; fearlessness of the domination of the powerful; sympathy for the mistakes of the indiscreet; caution of the craftiness of the unprincipled; enthusiasm for that which is fine and inspiring; reverence for that which is sacred; these are some of the attributes of great lawyers.

Justin Miller
Dean, 1930-34
Duke University School of Law

The Distinction of Duke



Mastering the Law

The business of the Law School is to provide a place where professors and students may join in the effort to explore and to master the discipline of law.

Many students come to law study with a limited perception of what they are about. Some suppose that law is a body of rules and that lawyers are people who know the rules. This is not wrong, but it is misleadingly incomplete. Legal rules are countless; many are subject to frequent change; they conflict; and their words often conceal more meaning than they reveal. Lawyers are people who understand and influence the ways in which elusive rules work in the minds of officials who must enforce them. Their discipline is thus more than a mass of data to be assimilated. It is an activity; and its mastery requires judgment and gift of expression as well as information.

Mastery of this discipline is rarely to be achieved by passive learning. True, much lonely effort is required. But full development requires substantial interaction with others. For most learners of law, the best school is the one that affords the best opportunity and inducement to participate in a prolonged conversation about the law with persons of wit, industry, and experience. The more intense the dialogue, the stronger is the mastery of the discipline.

One who seeks such interaction might wisely examine four qualities of a law school: the students, the faculty, the intellectual environment, and the program.

The Duke Law Students

Each year, about 170 first-year law students are enrolled at Duke; the aim is to maintain a student body of about 500. Duke students are among the most rigorously selected in the United States; not more than four or five schools are able to maintain minimum academic admission standards that are higher than Duke's. Most entering students will present undergraduate academic records in the range of *A* minus or higher, and most will have scored in the low forties on the standardized test or higher.

Equally important, most Duke students bring other qualifications that assure their ability to contribute to the enterprise of mutual learning. About twenty-five members of a recent typical class are over twenty-five years of age. Many of these persons have recorded significant achievements in some activity outside the law. Others have attained graduate degrees in other disciplines. More have achieved particular distinction as undergraduates. Thus, there are accomplished writers, experienced performing artists, outstanding athletes, and others of unusual achievement.

Duke law students are unusually diverse in their backgrounds. The geographic distribution may be the broadest of any American law school. The number of under-

graduate institutions represented in the student body is almost certainly the largest in proportion to size. As must be the case with such institutions, the great bulk of the students are from middle-class suburban families. But a few are from rural communities. Some are from inner-city neighborhoods. And the ethnic diversity is substantial. Recent classes have included a number of international students, including at least one or more students from the People's Republic of China, whose government has established a special relationship with Duke. Duke, unlike most comparable schools, integrates its international graduate students, who are foreign lawyers, with the regular J.D. program, so that all its students have ample opportunity to establish relations with fellow students from around the world.

Diversity has been achieved with no substantial compromise on academic or intellectual qualifications. There is not and never has been a quota of any kind at Duke, but there is a continuing effort to achieve racial diversity in the mix of the student body. No one has been admitted to Duke who was regarded as a serious academic risk. Many of Duke's minority students have excelled in the academic program and provided leadership in extracurricular activities as well.

The Duke Law Faculty

There are presently thirty-eight persons holding professorial appointments in law at Duke; all but six of these hold academic tenure. Eight of those holding tenure have primary appointments in disciplines other than law. In addition four professors at foreign universities maintain continuing ties to the Law School of varying degrees of formality. All were selected after extensive search for the persons with the greatest capacity for legal discourse. Those holding tenure are persons who have proven themselves as excellent scholars who maintain positions of prominence in their fields. They are also expected to maintain excellence in the classroom. The full-time faculty are not expected to practice law; while minor consulting efforts are an appropriate method for maintaining contact with the profession, the professors are committed to scholarship, teaching, and public service. Most of the faculty have had substantial experience as lawyers, and not infrequently leaves are granted for the purpose of performing professional work elsewhere. Each year, several of the faculty are absent to engage in research, to teach elsewhere, to serve government, or to assist in the administration of the University. But their places are filled with visiting faculty, and the visitors are often persons of unusual stature.

The professorial faculty is assisted in the presentation of the law curriculum by a number of persons who have limited or qualified commitments to the law school program. The faculty includes senior lecturers, lecturers, fellows, and instructors in legal research. These persons are selected on the basis of the special contribution that each is able to make to the teaching program. They are selected from year to year in light of the needs of Duke students for particular kinds of instruction. A number of the adjunct faculty are legal practitioners; several are members of the judiciary; a few are scholars in law-related disciplines. Each year, one or more special international visitors are welcomed as temporary members of the law faculty.

The Duke Environment

The Law School is part of a university of relatively recent origin. Founded in 1924 with a single giant benefaction to a small college, Duke promptly took a place among the newly prominent American universities. Most of its schools and departments are recognized as superior. The School of Medicine and its hospital are particularly noted. All of the University's endeavors are conducted on a moderate scale with respect to the numbers of students served. About nine thousand students are enrolled in the University.

The relatively small size of the Law School is an important attribute. There is very little anonymity at Duke. Students are close to the faculty and to one another. The resulting sense of community tends to ease competitive pressure. Law students everywhere are an aggressive lot, and some elite law schools can be infected with a spirit of destructive competition. This can seriously obstruct the process of mutual instruction, and can even cause passivity and alienation among many students. Inertia in the midst of frenzy is the unfortunate syndrome. The phenomenon occurs less frequently in an institution that is conducted on a smaller, human scale, where friendships are more easily maintained. At such a school, it is more likely that competition amongst students will be stimulating and benign.

The sense of community within the Law School at Duke is enlarged by the fact that few of the students are involved with competing interests or relations in the area. Only one in nine of the students is a North Carolinian. Less than one in ten has previously attended Duke University. Relatively few are employed outside the University during the academic year. Most live, during the academic year, within a few minutes of the school. Thus, although the Law School does not maintain a residential facility for law students, there is at all times a substantial group of students working and talking in the building. The law building is not dramatic, but is designed to accommodate a fairly intimate and sociable learning habit.

The city in which Duke is located is a nineteenth-century tobacco mill town, the home of Bull Durham, Chesterfields, and Lucky Strikes. It is also now the location of a particularly prosperous black business community that includes the headquarters of a large insurance company. And it is part of a metropolitan area that includes Raleigh, the state capital, and Chapel Hill, the location of the University of North Carolina's main campus.

This metropolitan area does provide ample opportunity for recreation, but the attractions are not so numerous as to be a major source of distraction. It is no longer remote; there are frequent short flights to Washington. And its cultural isolation, a remnant of southern history, is rapidly diminishing. The center of the metropolitan area is now the Research Triangle Park, where over thirty substantial research laboratories are located, and where over twelve thousand scientists and engineers are employed. The high concentration of professional and scientific workers in the area has brought significant change. A symphony orchestra of quality is supported. In 1978, the American Dance Festival relocated in Durham. In 1982, the University opened a new student center which provides excellent accommodations for orchestral, ballet, and theatrical performances, and for films. This center is a few hundred yards from the Law School.

The Duke Program

The curriculum is distinctive in the degree to which students are drawn into formal dialogue with the faculty and with one another.

The most distinctive features are presented in the first year. Duke, unlike most schools serving similar students, invests a proportionate share of its teaching resources to instruction of first-year students. Students are generally assigned to take one beginning course in a class of not more than twenty-five students; in these classes, a heavy emphasis is placed on student participation. Every member of the class is expected to participate in the discussion frequently.

In addition, all first-year students are assigned to a tutorial program requiring each member of the class to do a substantial amount of writing under faculty supervision. Student work is criticized and often rewritten until a high standard of quality is achieved. The experience provided is not unlike that which is afforded at many schools only to those students who are elected to law reviews, where the students vigorously edit the work of one another.



The intended effect of these features of the first-year program is to involve students more deeply with one another and with the faculty in a shared intellectual enterprise. This effort is continued through the upperclass years in the seminar offerings.

Another unusual feature of the first year is the intensive course, Professional Advocacy, which explores the law governing professional relationships. Part of the instruction in this course is given by persons of substantial professional experience. Additional work in writing and advocacy is a feature of this course.

Since 1983, part of the entering law class has been admitted for a special program beginning about the first of June. These students begin the study of law in the summer, leaving time in the first year also to commence graduate level study of economics, history, philosophy, political science, public policy science, sociology, or the study of the humanities. At the end of the first year these students will have completed all of the work required of first-year law students, and will also have made a solid start on an advanced degree in a second discipline. The purpose of this program is to reinforce the interest of the participating students in law as an academic discipline that is linked to others. Students can complete the J.D. and M.A. degrees in three academic years plus the entering summer. This program is a joint venture of the Law School and the Graduate School.

As an alternative open to summer-entering students, the Law School also offers its own joint-degree program for students wishing to pursue a second degree in law: the Master of Laws (Foreign and International Law). This degree can also be completed in the period of resident study of three years plus the entering summer although many of the students in this program find it useful to seek credit for a short course taken abroad in a later summer.

The school also maintains a substantial clinical program through a number of the advanced seminars that are presented by the clinical method. Students are placed in professional roles and asked to perform the intellectual endeavors of lawyers. Their performances are criticized, often by practitioners who are actively engaged in the professional activity involved. Many of these clinical seminars require substantial writing. One, the seminar on trial practice, is largely forensic and involves heavy use of videotape to review and criticize student presentations. Another course in appellate practice utilizes the services of distinguished members of the federal judiciary. Also offered to upperclass students is an unusual clinical course in commercial practice which brings students under the supervision of lawyers practicing in major private firms.

Other seminars are directed at more purely theoretical topics. But these, too, are conducted in small groups of twenty-five or less, and generally require substantial writing. These offerings also serve to bring students into closer contact with one another and with the faculty in the common pursuit. Another distinctive feature of the upperclass curriculum is the Research Tutorial, which brings together a small group of students and faculty for the purpose of a joint venture in scholarship leading to publication.

Upperclass students are encouraged to blend formal instruction with these less formal, more personal contacts with the faculty. They are also encouraged to invest substantial academic effort in other programs having less faculty involvement, especially writing and editorial work for one of the school's three scholarly publications. The *Duke Law Journal* is a student-edited publication managed in the traditional mold. *Law and Contemporary Problems* is an interdisciplinary publication edited by students working with a faculty board responsible for long-term planning and policy. The *Alaska Law Review*, which first appeared in 1984, is written and edited by students working with a faculty board responsible for assuring appropriate service to the Alaska Bar Association which co-sponsors the publication. Each of these journals

has a substantial circulation. The proportion of Duke students writing and editing for such publications is the highest of any law school.

The substance of law study at Duke is otherwise largely the same as that presented elsewhere; all American law schools study the same general subject. First-year offerings are especially conventional. The Duke law curriculum, like that of other fine schools, does offer a few features that reflect interests, traditions, or opportunities that are special if not unique. Especially rich are the offerings on the law bearing on the conduct of the "private sector," comparative and international law, legal theory, and legal history. Also of special interest is the unusual offering of clinical instruction.

The Duke program is not ideal for all applicants. Especially for those who prefer anonymity, or who value the right to remain passive in the assimilation of learning provided by others, Duke is not likely to be the best choice. Nor is it likely to be best for those who wish to test themselves in an atmosphere of unrestrained academic competition.

Law Study and Professional Competence

Prospective law students share in the objective of achieving professional competence. Interest in this goal has been heightened in recent years by expressions of doubt about the competence of lawyers that have come from persons highly placed in the profession. Some have suggested that law schools are doing less than they should to assure the competence of their graduates.

Beginning law students should perhaps be warned that the professional competence of graduates is not an assurance that any program of university instruction in law can make. Most Duke alumni are very competent, indeed, to perform their work. In part, this competence is the result of training and learning acquired at Duke. But students partaking of the program cannot be promised competence to perform any professional task they may be assigned. One reason is that law students will, as lawyers, perform an enormous diversity of services. Merely defining general legal competence is a task beyond our present capacity; only if the work is more narrowly defined does the objective have meaning. Most students do not have sharply defined career objectives.

A second reason for diffidence is that the ingredients of competence, insofar as we understand them, include diverse personal traits that a university has but limited capacity to influence and no ability to control after graduation. Competence is, for the most part, a condition or a habit that lawyers must impose upon themselves.

Thirdly, it is true that much lawyer work is not of the sort that makes rigorous intellectual demands. The University seeks to maintain an environment in which questioning and speculation are the normal disposition. Such an institution is inefficient and ineffective when its energies are applied to the more confining tasks of technocracy that may be a part of many lawyers' work.

For these reasons, it will remain true for all graduates, to varying degrees, that they will leave the Law School with some distance yet to go in order to achieve the level of competence at professional work which they should expect of themselves.

This is not to say that academic law training at Duke, or elsewhere, is unrelated to professional competence. The skills of reading, writing, speaking, listening, and thinking are elevated by academic work in law, and they are the basic skills of lawyers. Thus, most of the Duke program of individual instruction is especially helpful in achieving professional competence.

Moreover, there is very little work of importance that is performed by lawyers that does not depend in part on an understanding of the law, which is the central object of academic study. While mastery of law as an intellectual discipline is not a guarantee of competence, it is certainly a major component. Indeed, it is true for the most challenging work performed by lawyers that highly theoretical study is the best

preparation. Many professional tasks call for imagination, judgment, and wisdom; these are traits that are associated with the pursuit of law as an intellectual discipline. Development of such traits is, to be sure, an enterprise to be extended over the whole of a career and is not the end of university law training. The office of academic law study is to open minds to the range of possibilities that may be pursued by those who aspire to still deeper understanding and stronger mastery of the subject.

It may be that the most important effects of a Duke law education on lawyer competence are not immediately aimed at job performance. Thus, among the tasks that the faculty sets for itself is to enable students to perceive law as a humanist discipline, demanding in its intricacy, but incorporating at times the whole range of human experience. What students bring to law study in understanding history, philosophy, literature, anthropology, and a dozen other disciplines is truly relevant and ought not to be left at the portals of courtrooms and law offices. The lawyer who retains a generous sense of relevance is more likely to grow in wisdom and judgment over the longer term of his or her career.

Also, competence seems to be closely associated with the pride and self-esteem of individual professionals. It is no small source of pride if law students can know that they have met some of the most intractable problems that men and women can meet, and have yet performed with credit.

Finally, competence seems also to be associated with professional integrity because it depends on a willingness to perform even when rewards are postponed, or unpromised. One feature of law that is fully revealed only to those who have pursued it rigorously is that even at its worst, when the law is stupid or cruel, it retains a tendency to improve itself. If thus seen to reflect a heartening idealism, it provides a comfort to the lonely practitioner in those moments when he or she is tempted to forsake craftsmanship, to overreach or neglect a client.

In these ways, the kind of experience that Duke seeks to provide is preparation more for a career than for a job.

Conclusion

Duke does not expect law students to come with well-defined career goals. It does expect that they will bring a respect for the academic enterprise and a curiosity about the institutions and values of law. It also expects that those who leave will share a commitment to the craft of law, and a spirit that will help them bear important responsibilities through all of their productive years, with credit to themselves and to one another. The contribution that Duke hopes to make is to provide an environment in which such shared commitments can germinate and flourish.

Law Faculty



Presented here are faculty holding academic appointments in the Law School extending beyond one year.

Patrick S. Atiyah, *Visiting Professor of Law*

B.A. 1953, B.C.L. 1954, M.A. 1957, D.C.L. 1974, Oxford University. A native of Great Britain, Professor Atiyah has pursued an academic career that has taken him successively to the University of Khartoum, the Australian National University, the University of Warwick, and back to Oxford, where he is presently Professor of English Law. He has also taught at Harvard. His numerous books have won wide critical acclaim; the most recent, *Law and Modern Society*, was published in 1983. He returns for his third visit to Duke in the spring of 1987 to teach Comparative Law: The English and American Traditions. His seminar will be offered again in the spring of 1989.



Katharine Tiffany Bartlett, *Professor of Law*

B.A. 1968, Wheaton College; M.A. 1969, Harvard University; J.D. 1975, University of California, Berkeley. A native of Connecticut, Professor Bartlett served for three years as a secondary school teacher in that state before entering law school. She commenced her legal career with a judicial clerkship in the Supreme Court of California. From 1976 to 1979, she worked as a staff attorney at the Legal Aid Society of Alameda County in Oakland, California, concentrating on law reform and major impact litigation. She began teaching at Duke in 1979. Her special areas of interest include child advocacy, family law, and public school law. She was on leave during the 1985-86 academic year visiting at the University of California at Los Angeles School of Law.



Lawrence G. Baxter, *Professor of Law*

B.Comm. 1973, LL.B. 1975, Ph.D., University of Natal; LL.B. 1977, Dip.Leg.Stud. 1978, Cambridge. A native of South Africa, Professor Baxter supplemented his academic studies in Natal and Cambridge with a two-year period of clerkship leading to admission as an attorney, and brief period of professional practice before taking an appointment in 1978 at the University of Natal. In 1982 he was appointed to a chair of law at the same university, and in 1984 he was also a visiting professor at the University of Cape Town. He has served as an adjudicator on the Natal Midlands Licensing Appeal Board, and has published a number of works in administrative, constitutional, and comparative law. Among these is a treatise, *Administrative Law*, published in 1984. He has been teaching at Duke since 1985.



Sara Sun Beale, *Professor of Law*

B.A. 1971, J.D. 1974, University of Michigan. A native of Toledo, Ohio, Professor Beale's experience includes a judicial clerkship on the United States Court of Appeals, as well as a year in private practice in Detroit, Michigan. In 1976 she joined the United States Department of Justice, where she served one year in the Office of Legal Counsel, and two years in the Office of the Solicitor General. She began her teaching career at Duke in 1979. Her principal academic interests are in the field of criminal law and procedure.



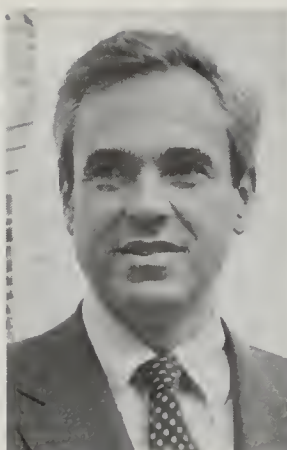
Herbert L. Bernstein, *Professor of Law*

B.A. 1953, Dr. jur. 1962, Hamburg University, Germany; J.D. 1967, University of Michigan. A native of Germany, Professor Bernstein practiced as a junior lawyer until 1958 and a regular member of the bar thereafter. Simultaneously, he was a research and teaching assistant at Hamburg University from 1956 to 1960. Since 1958 he has also been affiliated with the Max-Planck Institute of Foreign and Private International Law. He taught at the University of California from 1967 to 1971; then returned to Hamburg University as Professor of Law. After a previous visit, he came to Duke from Hamburg in 1984. His teaching includes contracts, comparative law, and insurance. He is the author of numerous books and articles on diverse subjects in the fields of international law, conflict of laws, insurance, and business law.



H. Keith H. Brodie, James B. Duke Professor of Psychiatry and Law

A.B. 1961, Princeton University; M.D. 1965, Columbia University. Dr. Brodie served at hospitals in New Orleans and New York City before becoming a Clinical Associate with the National Institute of Mental Health in 1968. In 1970, he joined the medical faculty of Stanford University. He was awarded a first prize in 1971 for research by the American Psychological Association. Dr. Brodie is a member of the Institute of Medicine of the National Academy of Sciences and he has chaired IOM's Board of Mental Health and Behavioral Medicine. He came to Duke in 1974 as Professor and Chairman of the Department of Psychiatry and Director of Psychiatric Services at Duke University Medical Center. He has also served as President of the American Psychiatric Association. His most recent book is *Modern Clinical Psychiatry*, published in 1982. He was first appointed to the law faculty in 1982. He presently serves as President of Duke University.



Paul D. Carrington, Professor of Law

B.A. 1952, University of Texas; LL.B. 1955, Harvard University. Professor Carrington is a native of Dallas, Texas. His professional experience includes a brief stint in private practice in Dallas and in a military law office, as well as occasional work for the American Civil Liberties Union and the American Association of University Professors. Since his teaching career began in 1957, he has taught at more than a dozen law schools, including most notably the University of Michigan, where he served from 1965 to 1978, before becoming Dean at Duke. He has been active in judicial law reform efforts, particularly in regard to appellate courts and procedure. He has also been involved in the affairs of the Association of American Law Schools, most recently as a member of its Executive Committee. He has published in the fields of civil procedure, education law, and legal education. He teaches civil procedure and is Reporter for the Committee of the Judicial Conference of the United States which advises the Conference and the Supreme Court on changes in the Federal Rules of Civil Procedure. He presently serves as Dean.



George C. Christie, James B. Duke Professor of Law

A.B. 1955, J.D. 1957, Columbia University; S.J.D. 1966, Harvard University. A native of New York City, Professor Christie was Editor-in-Chief of the *Columbia Law Review*. He commenced his legal career with private practice in Washington, D.C. In 1960-61, he was a Ford Fellow at Harvard Law School; and in 1961-62, he was a Fulbright Scholar at Cambridge University, where he earned a Diploma in International Law. He then joined the law faculty of the University of Minnesota, where he taught for almost four years. In 1966, he returned to Washington to serve as Assistant General Counsel for the Near East and South Asia of the Agency for International Development before coming in 1967 to Duke. His chief academic interests are in the areas of torts and jurisprudence, in both of which he has published widely. He is the editor of a casebook in jurisprudence published in 1973 and one on torts published in 1983. His monograph, *Law, Norms and Authority*, was published in 1982. He has been a visiting professor at the Universities of Michigan, Florida, Otago, and Witwatersrand, and Fudan University in Shanghai, and a fellow of the National Humanities Center.



James D. Cox, Professor of Law

B.S. 1966, Arizona State University; J.D. 1969, University of California, Hastings College of the Law; LL.M. 1971, Harvard University. Professor Cox is a native of Ellinwood, Kansas. He entered law teaching as a teaching fellow at Boston University, and has since taught at the University of San Francisco, Stanford University, and the University of California, Hastings College of the Law, before coming to Duke in 1979. He has focused his writing and teaching in the areas of corporate and securities law. Professor Cox is the author of a 1980 book on the utilization of financial information in the regulation of public corporations.



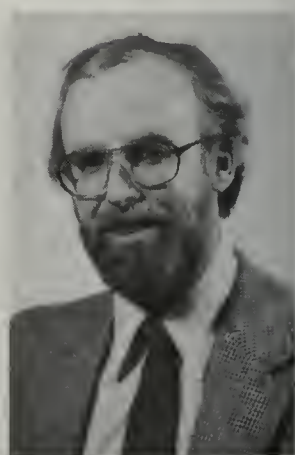
Jerome M. Culp, Jr. Associate Professor of Law

A.B. 1972, University of Chicago; A.M. 1974, J.D. 1978, Harvard University. While in law school he served as senior editor of the *Harvard Civil Rights-Civil Liberties Law Review*. His experience includes a research fellowship with the Rockefeller Foundation and a judicial clerkship in the U.S. Court of Appeals. He came to Duke from Rutgers in 1985. His principal work to date is in the area of employment discrimination and economic analysis of law. He teaches torts and employment discrimination. In calendar year 1987, Professor Culp will be Distinguished Scholar at the Joint Center for Political Studies in Washington, D.C.



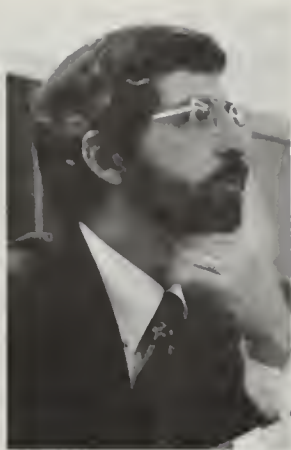
Richard A. Danner, Professor of Legal Research

B.A. 1969, M.S. 1975, J.D. 1979, University of Wisconsin. Professor Danner comes from Madison, Wisconsin. Prior to joining the library staff at Duke as Associate Law Librarian in 1979, he was Environmental Law Librarian at the University of Wisconsin. He assumed directorship of the Law Library in 1981. His teaching interests are in legislation and in legal writing and research. He is the editor of the *Law Library Journal* and has contributed to professional journals in law librarianship and library science. His book, *Legal Research in Wisconsin*, was published in 1980.



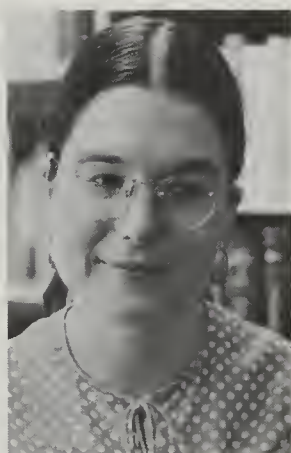
Walter E. Dellinger III, Professor of Law

A.B. 1963, University of North Carolina; LL.B. 1966, Yale University. Professor Dellinger is a native of Charlotte, North Carolina. He taught political and civil rights at the University of Mississippi from 1966 to 1968. In 1968-69, he served as a judicial clerk in the Supreme Court of the United States. He joined the Duke law faculty in 1969, serving as Associate Dean from 1974 to 1976 and as Acting Dean from 1976 to 1978. He has also taught at the University of Southern California, the University of Michigan, and the Catholic University of Leuven, Belgium. He teaches constitutional law and history.



Deborah A. DeMott, Professor of Law

B.A. 1970, Swarthmore College; J.D. 1973, New York University. Professor DeMott spent her early years in DuBois, Pennsylvania. She served as Articles Editor of the *New York University Law Review*. She began her professional career with a judicial clerkship in a federal court in New York City, and later practiced with a large law firm in that city, until she joined the Duke law faculty in 1975. She has also taught at the University of Texas and at the Hastings College of Law of the University of California. She is author of a treatise on shareholders' derivative actions to be published in December 1986 and is also the editor of a 1980 book on corporate governance. Her other writing is on the fields of corporate law and securities regulation. She will be a Fulbright Senior Scholar from July-October 1986 at Sydney and Monash Universities in Australia.



Robinson O. Everett, Professor of Law

A.B. 1947, J.D. 1950, Harvard University; LL.M. 1959, Duke University. Professor Everett is a native of Durham, North Carolina. He served for several years as a Legal Officer in the Air Force and as a Commissioner of the United States Court of Military Appeals. He returned to Durham to enter a general practice, which he continued until 1980 when he ascended to the bench of the United States Court of Military Appeals as Chief Judge. From 1961 to 1964, he served as Counsel to the Subcommittee on Constitutional Rights of the United States Senate Judiciary Committee. He has been active in the affairs of the North Carolina Bar and of the community of Durham. He has long served as a Commissioner on Uniform State Laws and has been active in various law reform efforts. He has published on many legal topics, most notably military justice and local government law. His teaching at Duke began as early as 1950. He was elected to regular membership on the faculty in 1967. He is on part-time leave.



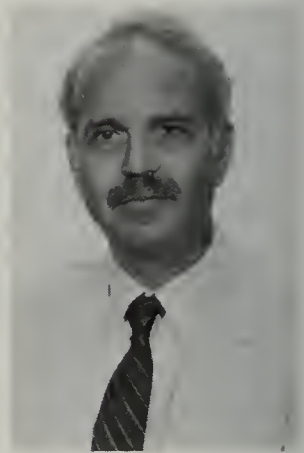
Peter G. Fish, *Professor of Political Science and Law*

A.B. 1960, Princeton University; A.M. 1965, Ph.D. 1968, The Johns Hopkins University. Professor Fish has served as guest scholar at the Brookings Institution and taught at Oberlin and Princeton before coming to Duke in 1969. He is author of *The Politics of Federal Judicial Administration* (1973) and *The Office of the Chief Justice* (1984). From 1977-79 Professor Fish served as a lay member of the United States Circuit Judge Nomination Commission, Panel for the Fourth Circuit. He teaches a seminar on the politics of judicial administration.



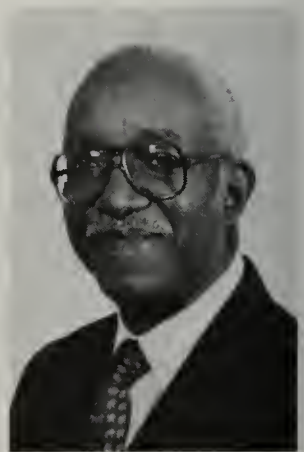
Stanley E. Fish, *Professor of English and Law*

B.A. 1959, University of Pennsylvania; M.A. 1960, Ph.D. 1962, Yale University. Professor Fish taught at the University of California, the University of Southern California, and The Johns Hopkins University before coming to Duke in 1985. His principal field has been the study of Milton; this interest evolved to produce important work on literary theory and his widely noted 1980 book: *Is There A Text in This Class?* Most recently he contributed to the application of literary theory to law and has written for legal publications. He came to Duke in 1985 and teaches a seminar on Professionalism which is presented to students of the humanities as well as law.



John Hope Franklin, *Professor of Legal History*

A.B. 1935, Fisk University; M.A. 1936, Ph.D. 1941, Harvard University. A native of Oklahoma, Professor Franklin taught at Fisk University, North Carolina Central University, Howard University, Brooklyn College, and the University of Chicago, where he was the John Matthews Manly Distinguished Service Professor, before coming to Duke in 1982 as the James B. Duke Professor of History. He is now emeritus in history and continues his teaching in the Law School. He has served as president of several scholarly organizations, including the United Chapters of Phi Beta Kappa and the American Historical Association; as Pitt Professor of American History and Institutions at Cambridge University; and as a member of many national commissions and delegations, including the National Council on the Humanities and UNESCO. He has published several books, among which are *The Free Negro in North Carolina* (1943), *From Slavery to Freedom: A History of Negro Americans* (1947), *Reconstruction after the Civil War* (1961), *The Emancipation Proclamation* (1963), *A Southern Odyssey: Travelers in the Antebellum North* (1976), and *Racial Equality in America* (1976), in addition to numerous articles in professional journals.



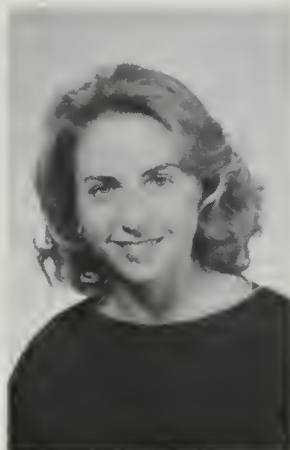
Koichiro Fujikura, Visiting Professor of Law

B.A. 1957, Doshisha University; B.A. 1961, Amherst College; LL.M. 1962, Northwestern University; LL.M. 1963, Harvard University. Professor Fujikura returned to Japan after his four years of study in the United States, where he joined the faculty of Doshisha, serving as dean of the law faculty there before moving to the University of Tokyo in 1981; he remains Professor of Law at Tokyo. He has also taught at California, Harvard, and Hawaii. Among his writings is a book published in English, *Environmental Law in Japan* (1981). He will make his second visit to Duke in the fall of 1988 to teach Comparative Law: Legal System in Japan. It is anticipated that his instruction will be presented again in the fall of 1989.



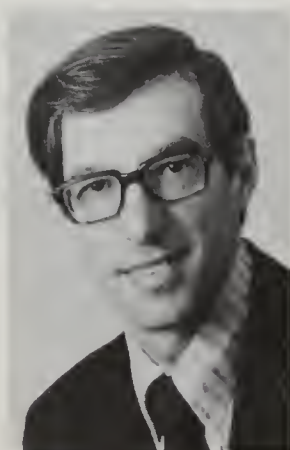
Pamela Gann, Professor of Law

B.A. 1970, University of North Carolina; J.D. 1973, Duke University. A native of Monroe, North Carolina, Professor Gann was Articles Editor of the *Duke Law Journal*. She practiced with private firms in Atlanta and Charlotte before returning to Duke to teach in 1975. She has also taught at Washington University and the Universities of Michigan, Virginia, Colorado, and San Diego. She is the coeditor of a 1984 casebook on corporate taxation. Her writing is primarily in the areas of taxation and international tax investments. In 1984, her work was supported by the Council on Foreign Relations.



Martin P. Golding, Professor of Philosophy and Law

B.A. 1949, M.A. 1952, University of California, Los Angeles; Ph.D. 1959, Columbia University. A native of New York City, Professor Golding taught at Columbia University from 1957 to 1970 and at the John Jay College of Criminal Justice of the City University of New York from 1970 to 1976 before coming to Duke in 1976 as Professor and Chairman of the Department of Philosophy. He has also taught at New York University, Bar-Ilan University in Israel, and the Universities of California (both Berkeley and Los Angeles), Southern California, and Colorado. His writing includes three books, *The Nature of Law* (1966), *Philosophy of Law* (1975), and *Legal Reasoning* (1984), and numerous articles on jurisprudence and ethics. Professor Golding was Senior Visiting Fulbright Lecturer in Australia and has been a fellow of the National Humanities Center.



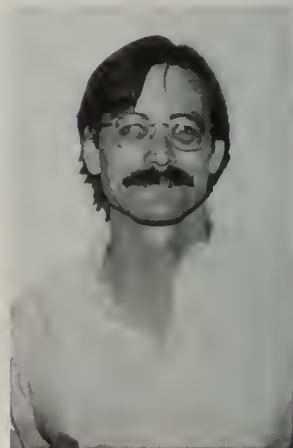
Daniel Arthur Graham, Professor of Economics and Law

B.S. 1967, West Texas State University; Ph.D. 1969, Duke University. Professor Graham is a native of Amarillo, and has been a member of the Duke economics faculty since 1969. His most important work is *Microeconomics: The Analysis of Choice*, published in 1980. In recent years, his writing has been increasingly devoted to subjects that intersect both law and economics, and he has been teaching economics in the summer-entering law program. He joined the law faculty in 1984.



Paul H. Haagen, Assistant Professor of Law

B.A. 1972, Haverford College; B.A. 1974, Oxford; M.A. 1976, Princeton; J.D. 1982, Yale. Professor Haagen was born in Lancaster, Pennsylvania and raised in Connecticut. After graduating from college, he studied history first at Oxford as a Rhodes Scholar, and later at Princeton, where he also taught. In law school, he was an editor of *Yale Studies in World Public Order* and editor-in-chief of the *Yale Law and Policy Review*. Since law school, he has clerked on the United States Court of Appeals and then practiced law in Philadelphia for two years before coming to Duke in 1985. His principal academic interests are legal history and international law.



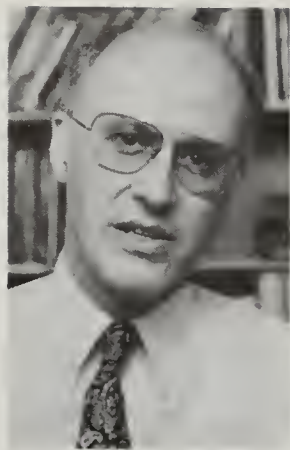
Guy Haarscher, Visiting Professor of Law

J.D. 1971; Ph.D. 1977, Universite Libre de Bruxelles. Professor Haarscher is a native of Brussels and has lived and worked in that city all of his life. He is Professor of Law and Director of the Center of the Philosophy of Law at his university. He has also taught at the Australian National University. His most recent book is *Egalite et Politique* (1982). He will make his second visit to Duke in the fall of 1987 to teach his course Law and Political Philosophy. It is anticipated that his instruction will again be presented in the fall of 1989.



Clark C. Havighurst, William Neal Reynolds Professor of Law

A.B. 1955, Princeton University; J.D. 1958, Northwestern University. Professor Havighurst is a native of Evanston, Illinois. He spent two years in military service, one year as a Research Associate at Duke, and three years in private law practice in New York City before beginning his teaching career at Duke in 1964. Professor Havighurst was for five years the editor of *Law and Contemporary Problems*. In addition to teaching antitrust law and the law of regulated industries, he has a special academic interest in the regulation of the health care industry and in national health policy. His book, *Deregulating the Health Care Industry*, was published in 1982. Professor Havighurst is Director of the Law School's Program on Legal Issues in Health Care, and he has served as Scholar in Residence at, and is a member of, the Institute of Medicine of the National Academy of Sciences. He has also been a resident consultant to the Federal Trade Commission in Washington, D.C., and is an Adjunct Scholar in Law and Health Policy of the American Enterprise Institute. He has also taught at Stanford, Northwestern, and Michigan.



Donald L. Horowitz, Professor of Law

A.B. 1959, LL.B. 1961, Syracuse University; LL.M. 1962, M.A. 1965, Ph.D. 1967, Harvard University. A native of New York City, Professor Horowitz began his professional career as a judicial clerk in the United States District Court. With the exception of a stint as a government lawyer, he has primarily been engaged in research at the Harvard University Center for International Affairs, the Council on Foreign Relations, the Brookings Institution, and the Smithsonian Institution. A recipient of a grant from the Guggenheim Foundation for work in ethnic relations, Professor Horowitz has published several books. Among them are *The Jurocracy*, a book about government lawyers, and *The Courts and Social Policy*, for which he was awarded the Louis Brownlow Prize of the National Academy of Public Administration in 1977. His most recent book is *Ethnic Groups in Conflict* (1985). Professor Horowitz came to Duke in 1981 and has served as a fellow of the National Humanities Center.



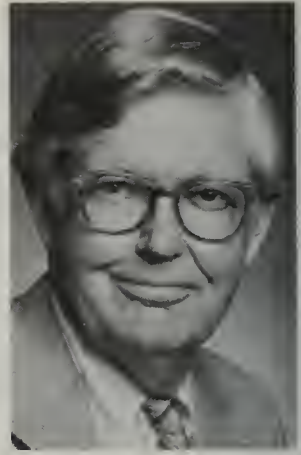
David L. Lange, Professor of Law

B.S. 1960, LL.B. 1964, University of Illinois. Professor Lange practiced law with a Chicago firm that included media enterprises among its clients. He has also had substantial professional experience in radio, television, cable, and motion picture production, and has served as a member of the Governing Committee of the ABA Forum on the Entertainment and Sports Industries. He joined the Duke law faculty in 1971, where he has since served as General Editor of *Law and Contemporary Problems* and as Chairman of the Center for the Study of Communications Policy. His principal academic interests lie in the areas of intellectual property, entertainment, and communications law.



William E. Leuchtenburg, *Professor of Legal History*

B.A. 1943, Cornell University; M.A. 1944, Ph.D. 1951, Columbia University. Professor Leuchtenburg holds the Kenan Chair in History at the University of North Carolina and previously held the DeWitt Clinton Chair at Columbia. He has also taught at Oxford University, and previously at the Law School. His field is modern American history with emphasis on the Roosevelt era; his latest book is on the legacy of Franklin Roosevelt and its impact on American presidents from Truman to Reagan. He teaches in the area of constitutional history.



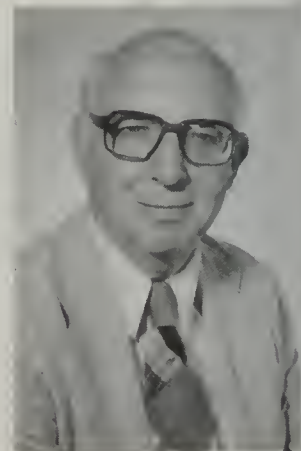
Percy R. Luney, Jr., *Martha Price Research Fellow and Senior Lecturer in Law*

A.B. 1970, Hamilton College; J.D. 1974, Harvard University. Professor Luney devoted a year of study to economic geology in the sub-Sahara as a Thomas J. Watson Fellow and taught that subject for a year at Cornell after completing law school. He thereafter practiced law in the Department of the Interior and with a private firm practicing primarily in the land and resource development area. In 1980, he joined the faculty of North Carolina Central University where he has also served as Assistant Dean. He has been a Fellow of the North Carolina Japan Center, and was a Visiting Scholar at the University of Tokyo for the fall semester of 1983. At Duke, he teaches in the area of Japanese Law. Professor Luney was a Fulbright Scholar at the University of Tokyo during the summer of 1986.



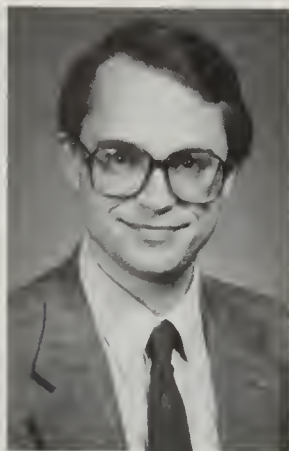
Richard C. Maxwell, *Harry R. Chadwick Professor of Law*

B.S.L. 1941, LL.B. 1947, University of Minnesota; LL.D. (Hon.) California Western University. Professor Maxwell is a native of Minnesota. He started his academic career at the University of North Dakota and has been a faculty member at the University of Texas and UCLA. He was counsel to the Amerada Petroleum Corporation during the early development of the Williston Basin and served for a decade as dean of the law school at UCLA, where he was also Connell Professor of Law. He has held visiting chairs at the University of Minnesota, the University of Singapore, and the University of Colorado and was Fulbright Lecturer at Queen's University, Belfast. In 1972 he was President of the Association of American Law Schools. He is an editor of the *Oil and Gas Reporter* and most of his scholarship in recent years deals with mineral law. He has published books on social legislation, real property security transactions, and oil and gas law. He joined the Duke faculty in 1979.



Thomas B. Metzloff, Associate Professor of Law

B.A. 1976, Yale College; J.D. 1979, Harvard University. Professor Metzloff is a native of Buffalo, New York. He began his professional career with a judicial clerkship on the United States Court of Appeals, followed by a clerkship with the Supreme Court of the United States. He then practiced with a private firm in Atlanta before accepting a position at Duke in 1985. He has written articles on attorney malpractice. He teaches civil procedure, as well as professional responsibility and a course on professional liability.



Robert P. Mosteller, Associate Professor of Law

B.A. 1970, University of North Carolina at Chapel Hill; J.D. 1975, Yale University; M.P.P. 1975, Harvard University. Professor Mosteller is a native of Vale, North Carolina. After serving as a judicial clerk, Professor Mosteller joined the District of Columbia Public Defender Service as a staff attorney. During seven years with the Public Defender Service, he was Director of Training and Chief of the Trial Division. He came to Duke in 1982. He teaches Evidence, Criminal Procedure, and in the Criminal Litigation Clinic.



Jonathan K. Ocko, Associate Professor of Legal History

B.A. 1966, Trinity College; M.Phil. 1971, M.A. 1972, Ph.D. 1975, Yale University. A native of New York City, Professor Ocko taught at Clark University and Wellesley College before joining the faculty of North Carolina State University in 1977. During the academic year 1978-79, he studied law at Harvard University, where he also taught Asian law. His principal scholarly efforts have been in the field of Chinese history and law. His book, *Bureaucratic Reform in Provincial China*, was published in 1982. In 1983, he was appointed to a part-time professorial position in the Law School.



Evelyn M. Pursley, *Lecturer in Law*

B.A. 1973, M.L.S. 1975, University of Oklahoma; J.D. 1984, Duke University. A native of Oklahoma, Ms. Pursley served as a school teacher and university librarian in that state before entering law school. While at Duke she was executive editor of *Law and Contemporary Problems*. After graduating from law school, she served as a law clerk for the United States Court of Appeals. She returned to Duke in 1985 as Assistant Dean for Alumni and Development. She also teaches in the clinical program.



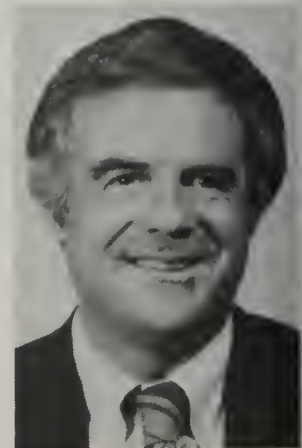
A. Kenneth Pye, *Samuel Fox Mordecai Professor of Law*

B.A. 1951, University of Buffalo; J.D. 1953, LL.M. 1955, LL.D. 1978, Georgetown University; L.H.D. 1979, Belmont Abbey College. Following graduation from law school, Professor Pye entered military service, after which he joined the law faculty of Georgetown University, where he served as Associate Dean from 1961 to 1966. He joined the Duke law faculty in 1966. He has taught at other universities on four continents. At Duke, he has served as University Counsel, twice as Dean of the Law School and twice as Chancellor of the University. He served as President of the Association of American Law Schools in 1977, as a director of the Council for Law Related Studies, as a member of the House of Delegates of the American Bar Association, and as a trustee of the Law School Admissions Council. He was appointed Chairman of the Council for International Exchange of Scholars in 1984. He is known for his scholarship chiefly in the field of criminal procedure.



William Arneill Reppy, Jr., *Professor of Law*

A.B. 1963, J.D. 1966, Stanford University. Professor Reppy is a native of Oxnard, California. He commenced his professional career with two judicial clerkships—one in the Supreme Court of California, followed by another in the Supreme Court of the United States. He then practiced law for three years with a private firm in Los Angeles, until joining the Duke law faculty in 1971. He has also taught at the Universities of California, Michigan, Washington, and North Carolina. He is a member of the Condominium Statutes Drafting Committee of the North Carolina Statutes Commission. His principal scholarly work is in the areas of marital property rights and conflict of laws. He does pro bono legal work for the humane and animal rights movements.



Horace B. Robertson, Jr., Professor of Law

B.S. 1945, U.S. Naval Academy; J.D. 1953, Georgetown University; M.S. 1968, George Washington University. Professor Robertson is a native of Kannapolis, North Carolina. After five years as a line officer in the Navy, he was assigned to law study. After achieving a distinguished record, including service as Editor-in-Chief of the *Georgetown Law Journal*, he returned to active duty as a Judge Advocate, rising ultimately to be the highest ranking legal officer in the Navy in 1975. While on active duty, he served as a member of the United States Delegation to the United Nations Law of the Sea Conference in 1958 and to the United Nations Seabeds Committee's Preparatory Session in 1973. He joined the Duke law faculty in 1976. His primary teaching interests are in the fields of international law and admiralty. He also serves as Senior Associate Dean.



Thomas D. Rowe, Jr., Professor of Law

B.A. 1964, Yale University; M.Phil. 1967, Oxford University; J.D. 1970, Harvard University. A native of Ann Arbor, Michigan, Professor Rowe achieved preeminent academic records both as an undergraduate and as a law student; in the interim, he was also a Rhodes Scholar. He commenced his professional career as a law clerk in the Supreme Court of the United States. He served for one and one-half years as Assistant Counsel to a Subcommittee of the United States Senate and then practiced law with a private firm in Washington, D.C. He joined the Duke law faculty in 1975 and served as Associate Dean from 1981 to 1984. He has also taught at Georgetown and Michigan. He has written in the fields of civil procedure, judicial remedies, and constitutional law.



Joyce S. Rutledge, Senior Lecturer in Law

A.B. 1967, Goucher College; M.A. 1969, Ph.D. 1972, The Johns Hopkins University; J.D. 1981, Duke University. Ms. Rutledge was in the field of German literature before she undertook her legal training. While at Duke she was a member of the editorial board of *Law and Contemporary Problems*, and held several research assistantships. During 1981-82 she served as clerk for the U.S. Court of Appeals. Ms. Rutledge teaches legal writing, criminal law, upperclass seminars in appellate advocacy, a seminar on religion and law, and also serves as General Editor of *Law and Contemporary Problems* and the *Alaska Law Review*.



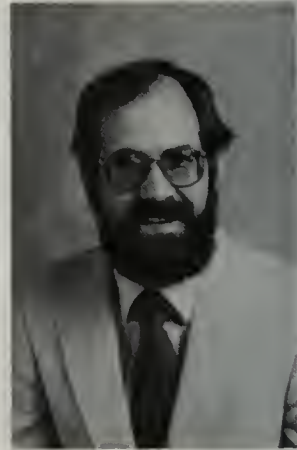
Richard L. Schmalbeck, Professor of Law

A.B. 1970, J.D. 1975, University of Chicago. Professor Schmalbeck is a native of Chicago, where he began his professional career as an economist with the Illinois Housing Development Authority in 1971. In 1973, he returned to law school at the University of Chicago, where he served as Associate Editor of the *University of Chicago Law Review*. Following law school graduation, he practiced law briefly in Columbus, Ohio, before accepting a position in Washington in 1976 as a Special Assistant to the Associate Director of the Office of Management and Budget. In 1977, he returned to private practice with a law firm in Washington, specializing in federal income tax. He began his teaching career at Duke in 1980, where his focus is on the fields of federal taxation and law and economics.



Christopher H. Schroeder, Professor of Law

B.A. 1968, Princeton University; M.Div. 1971, Yale University; J.D. 1974, University of California. Professor Schroeder is a native of Saginaw, Michigan. He served as Editor-in-Chief of the *California Law Review*. He practiced law with a San Francisco firm for two years before organizing a smaller firm in that city, where he engaged in environmental litigation in addition to a general litigation practice. He served as Director of the Energy and Environment Project of the Earl Warren Institute of the University of California and taught in the Energy and Resources Program and in the Law School of that university. He joined the Duke law faculty in 1979. He is also a Research Associate in the School of Forestry and Environmental Studies. He was on leave for 1985-86 visiting at the University of California at Los Angeles School of Law.



Melvin G. Shimm, Professor of Law

A.B. 1947, Columbia University; LL.B. 1950, Yale University. Professor Shimm is a native of New York City and served three years with the Army. He practiced law privately in New York City from 1950 to 1951 and as an attorney for the Wage Stabilization Board in Washington, D.C., from 1951 to 1952 before entering law teaching as a Bigelow Fellow at the University of Chicago from 1952 to 1953. He has been at Duke since 1953. He served as Associate Dean from 1978 to 1983. He has also taught at New York University and the Universities of Southern California, North Carolina, Michigan, and Texas. He has been heavily invested in the Law School's publication program, editing *Law and Contemporary Problems*, the *Journal of Legal Education*, and the American sections of the *Business Law Review* and the *Journal of Business Law*; and organizing and serving first as Faculty Editor and then as Faculty Adviser of the *Duke Law Journal*. He has also served as Senior Consultant with The Brookings Institution and as Director of the Association of American Law Schools' Orientation Program in American Law. His teaching interests lie primarily in the commercial law areas.



Bertel M. Sparks, Professor of Law

B.S. 1938, Eastern Kentucky University; LL.B. 1948, University of Kentucky; LL.M. 1949, S.J.D. 1955, University of Michigan. Professor Sparks was Editor-in-Chief of the *Kentucky Law Journal*, and then Cook Fellow at the University of Michigan. He taught at New York University from 1949 until he came to Duke in 1966. He has also taught at Michigan and Kentucky. He has also been a member of the Drafting Committee of the North Carolina General Statutes Commission since 1967. His writing includes two books, *Contracts to Make Wills* (1956) and *Cases on Trusts and Estates* (1965).



Gwynn T. Swinson, Senior Lecturer in Law

B.A. 1973, Antioch College; J.D. 1976, Antioch School of Law. Ms. Swinson has had experience in representing the interests of the federal government in civil matters. Appointed Assistant Branch Director, Commercial Litigation Branch, Civil Division, U.S. Department of Justice in 1980, she previously served as trial attorney for the department's Commercial Litigation and Federal Programs Branches. In addition to her responsibilities as Assistant Dean for Admissions and Student Affairs, she teaches courses in trial practice and professional responsibility.



William W. Van Alstyne, William R. Perkins and Thomas C. Perkins Professor of Law

B.A. 1955, University of Southern California; J.D. 1958, Stanford University; LL.D. (Hon.) 1976, Wake Forest University; LL.D. (Hon.) 1979, College of William and Mary. A native of Chico, California, Professor Van Alstyne was professionally employed first by the California Department of Justice and then by the United States Department of Justice. He began his teaching career at Ohio State University in 1959, coming to Duke in 1965. He has taught at a number of other law schools, including Stanford, the University of California (at Berkeley and at Los Angeles), the Universities of Chicago, Illinois, and Pennsylvania, and in Europe and China. He studied at the Hague Academy of International Law in 1961 and was a Senior Fellow at Yale in 1964-65. He has been especially active in the American Association of University Professors, serving as President in 1975-76. He is known for his writing and his speaking on the subject of constitutional law, appearing regularly in House and Senate proceedings and in briefs for the U.S. Supreme Court.



Neil J. Vidmar, Visiting Professor of Law and Social Science

A.B. 1962, MacMurray College; M.A. 1965, Ph.D. 1967, University of Illinois. Professor Vidmar is a native of Illinois, but is presently a Canadian citizen. Since completing his graduate work, he has taught at the University of Western Ontario, except for leaves at the Yale Law School, the Batelle Research Center in Seattle, and Osgoode Hall Law School at York University, Toronto. His principal work has been in the application of social science methods to the study of legal institutions; he is a Trustee of the Law and Society Association and a Fellow of the American Psychological Association. He has served as a consultant to a number of legal and scientific organizations in Canada and the United States. His most recent book is *Judging the Jury*, (1986). At Duke, he serves the Private Adjudication Center as Vice-President for Research. He also offers instruction in the Psychology of Justice and in Social Science Methods in Law. Although retaining his tenure at Western Ontario, it is anticipated that he will be in full-time residence at Duke in 1987-89.



John C. Weistart, Professor of Law

A.B. 1965, Illinois Wesleyan University; J.D. 1968, Duke University; LL.D. (Hon.) 1981, Illinois Wesleyan University. Professor Weistart was Editor-in-Chief of the *Duke Law Journal*. He served for a year as a judicial clerk on the Supreme Court of Illinois before joining the Duke law faculty in 1969. He served for three years as Editor of *Law and Contemporary Problems* and as American Editor of the *Journal of Business Law*, and is a member of the American Law Institute. He has also taught at the Universities of California at Los Angeles, Virginia, Harvard, and Michigan. He is known for his writing in the field of commercial law, and has served as a consultant to the Federal Trade Commission and the Federal Reserve Board. He is also a frequent commentator on issues in the athletics industry.



Visiting Faculty

Upendra Baxi, *Visiting Professor of Law (University of South Gujarat)*

Arnold N. Enker, *Visiting Professor of Law (Bar Ilan University)*

Shinichiro Michida, *Visiting Professor of Law (University of Kyoto)*

Extended Faculty

Jean T. Adams, *Senior Lecturer in Law*

Charles L. Becton, *Senior Lecturer in Law*

Donald H. Beskind, *Senior Lecturer in Law*

Michael G. Chiorazzi, *Senior Instructor in Legal Research*

Harry T. Edwards, *Senior Lecturer in Law*

Joel L. Fleishman, *Professor of Law and Public Policy Science*

C. Allen Foster, *Senior Lecturer in Law*

Daniel M. Friedman, *Senior Lecturer in Law*

Claire M. Germain, *Lecturer in Comparative Law and Legal Research*

Honorable John J. Gibbons, *Senior Lecturer in Law*

Robert M. Hart, *Lecturer in Law*

F. William Hutchinson, *Senior Lecturer in Law*

Sally C. Johnson, *Senior Lecturer in Psychiatry and Law*

Ralph McCaughan, *Lecturer in Law*

Michael J. Meurer, *Lecturer in Economics and Law*

James L. Oakes, *Senior Lecturer in Law*

J. Dickson Phillips, *Senior Lecturer in Law*

Alvin B. Rubin, *Senior Lecturer in Law*

Allen G. Siegel, *Senior Lecturer in Law*

Janet Sinder, *Instructor in Legal Research*

Gerald B. Tjoflat, *Senior Lecturer in Law*

Admissions



The admissions process for the typical law school applicant is at best onerous. The Law School is aware of the difficulties and uncertainties faced by applicants, and strives to treat each applicant with fairness and candor. The following description of the admissions process at Duke is presented with that object in mind.

Admissions Standards

At Duke, as at many law schools, the three most important criteria, in the order of their importance, are the Law School Admission Test (LSAT) score, the undergraduate grade point average (GPA), and the undergraduate institution attended.

Although reliance on purely academic criteria is appropriate in making some decisions, particularly those involving candidates either clearly admissible or clearly inadmissible, the majority of applications fall between these extremes. For these applications, Duke will give careful consideration to more subjective factors such as proven capacity for leadership, dedication to community service, excellence in a particular field, motivation, graduate study in another discipline, work experience, extracurricular activities, and personal and character information provided in letters of recommendation. Also, in interpreting the applicant's GPA, it is often necessary to make judgments regarding the strength of the course of study pursued and the significance of class rank or the progression of grades.

Although no quotas of any kind are employed in the admissions process, the Law School does make a conscious effort to achieve a broad diversity in each entering class in terms of general background, geography, and undergraduate institutions represented. An individual student may be selected not only for his or her marked potential for academic success, but also because application materials indicate that he or she can bring to Duke unique personal qualities or talents that will enhance the overall character of the entering class.

Duke has a faculty-initiated affirmative action plan for minority admissions, and special care is taken in evaluating applications from members of minority groups who traditionally have not been well represented in the legal profession. On occasion, special consideration is given to children of alumni of Duke University who are qualified to do acceptable work. Female applicants are evaluated according to the same standards as male applicants, and applications from women are encouraged.

An applicant who has been graduated from an accredited college, or one who will have been graduated from an accredited college during his or her course of study at the Law School, may be admitted as a candidate for the degree of Juris Doctor (J.D.). On rare occasions, an exceptionally qualified applicant may be admitted as a candidate for the degree of Bachelor of Laws (LL.B.).

Admission Procedures: J.D. Program

The Admissions Committee receives its authority by delegation from the law faculty and reports to the law faculty. The Committee, composed of four law professors and three law students, decides policy questions arising in the admissions process. Student members of the Committee, however, do not review individual files. All individual applications are reviewed by the Assistant Dean responsible for admissions.

Each applicant is responsible for collecting and submitting, together with the school's application for admission, the following documents:

1. Completed application form obtained from the Office of Admissions, Duke Law School, Durham, North Carolina 27706. A recent photograph should be attached to the application.
2. The Law School Application Matching Form which is issued to each applicant taking the Law School Admission Test.
3. Three completed reference forms, one of which should be written by an appropriate academic dean at the undergraduate school last attended. A statement of the applicant's rank in class will be helpful. It is suggested that the other reference forms be written by professors who have personal knowledge of the academic performance and potential of the applicant. References compiled and submitted by an established Career Planning and Placement Office at the applicant's undergraduate school will be accepted. Applicants who have been out of school for some time may substitute letters from employers or others who are well acquainted with their personal traits and intellectual potential. These references must be returned in sealed envelopes which are provided with the application form.
4. A nonrefundable processing fee of \$45. This application fee is not waivable except in cases of extreme personal hardship.
5. Financial aid forms. All applicants are required to return these forms; those not wishing to be considered for aid may so indicate.

Applicants are strongly urged to take the Law School Admission Test (LSAT) no later than December. Registration forms and information should be procured by writing directly to Law School Admission Services (LSAS), Box 2000, Newtown, Pennsylvania 18940. Applicants who are handicapped should contact LSAS directly for information concerning special accommodations for taking the LSAT.

Applicants must arrange for the submission of transcripts from all undergraduate and graduate schools attended to the Law School Data Assembly Service (LSDAS), Box 2000, Newtown, Pennsylvania 18940.

Duke has no formal deadline for the submission of applications. Review of completed applications begins in December and continues until the class is filled. However past experience indicates that students who apply and complete their applications by February 15 may have a more favorable chance of admission.

Personal interviews are generally not considered in making admissions decisions and, therefore, are not required. Interviews may be arranged, however, if there are special circumstances that cannot be adequately described in writing. It is Duke's assumption that the usual purpose for an interview is to provide the applicant with information about the school. Under some circumstances, interviews may be arranged with Duke Law School alumni.

Each applicant extended an offer of admission will be given a reasonable amount of time to respond. Written offers of admission will be sent to admitted candidates specifying the amount of deposit and other conditions required to hold a place in the class. Only in rare cases will offers be extended prior to January 15 or after May 1. After May 1, a waiting list is established and held open until the registration date. Offers are extended to applicants on the waiting list as withdrawals occur.

Admission to the Law School is conditional upon receipt of a final official transcript of all undergraduate and graduate work undertaken by the candidate.

Admission Procedures: Summer Joint Degree Program

Procedures for admission to the summer joint degree program are no different from those established for the regular J.D. program commencing in the fall semester. Applicants should indicate on the application form that they are applying to the summer program and designate either the LL.M. program offered by the Law School, or the Graduate School department in which they wish to pursue the M.A. Applicants to the LL.M. program are selected by the Law School Admissions Committee. The selection process for M.A. applicants is bifurcated. Upon a favorable decision by the Law School Admissions Committee, the M.A. applicant's file will be forwarded to the appropriate Graduate School department for review. Applicants must be formally admitted to the M.A. program by the Graduate School.

Students must elect whether they wish to be considered for entrance in the summer or fall, and may not be considered concurrently for admission to both programs. A student wishing to change that election may do so without payment of an additional processing fee. However, the Admissions Committee will treat the application to the alternate program as newly completed; thus a late change in election may prejudice the applicant's chance for admission. This policy reflects our need for a firm commitment from applicants regarding which program they wish to enter so that we may deal fairly with all applicants competing for a limited number of spaces in each class. Although applicant pools may change from year to year, our experience has been that competition for spaces is approximately equal for the two programs.

Other Joint Degree Programs

Applicants for any of the other joint degree programs offered by the Duke Law School are considered for admission to both schools on the same basis as those applicants who are applying for the individual programs. The admission decision of one school has no bearing on the admission decision of the other school. If accepted for admission by both schools, the applicant is automatically eligible to participate in the established joint degree program. Students planning to participate in such programs should notify the Law School immediately upon their admission.

Master of Legal Studies

Admission to this degree program is limited to persons who have achieved distinction in law-related professional work or who are pursuing law-related graduate degrees in other fields. Application to the program proceeds in exactly the same manner as for the J.D. program, with the single exception that the LSAT is not required of applicants who have taken the Graduate Records Examination in their primary field of study. Applicants who wish to substitute the GRE score should have an official report sent to the Admissions Office.

Reactivating Admissions Files

If an applicant has applied for admission in a previous year and was not extended an offer of admission or chose not to enter during that academic year, he or she may request that the file be reactivated for consideration by the Admissions Committee. The applicant may wish to update his or her personal statement at that time. A non-refundable fee of \$45 is charged for processing the application, and a check or money order for this amount must accompany the request for reactivation of the file. The applicant will not be required to reregister with the Law School Data Assembly Service (LSDAS) unless he or she retakes the LSAT after initially applying to the Law School.



Transfer Policy

In order to be considered for admission to Duke, a transfer applicant must present evidence of the satisfactory completion of one year of study at any law school that is a member of the Association of American Law Schools, and be eligible for readmission to that school. To be given serious consideration for admission, an applicant should rank in the top third of the class. Two academic years of law study must be completed at Duke.

The following items are required to complete a transfer applicant's admission file:

1. A nonrefundable processing fee of \$45;
2. Letter of certification from the Dean of the law school attended;
3. References from two professors who have personal knowledge of the academic performance and potential of the applicant;
4. Certified transcript of all grades earned in the first year of law school.

Ordinarily, it should not be expected that action will be taken upon transfer applications before July. Spring semester grades must be received before decisions can be made.

Graduate Study in Law

Admission to Duke to pursue law study beyond the basic professional degree is generally limited to J.D./LL.M. candidates and international students. For information about application to the graduate study program, see the description of admission procedures for the summer joint degree program or the section on international students.

University and Law School Rules

Students are subject to the rules and regulations of the University and the Law School that are currently in effect, or those that in the future may be promulgated by the appropriate authorities of the University. Every student, in accepting admission, indicates a willingness to subscribe to and be governed by these rules and regulations. The student also acknowledges the right of the University to take such disciplinary action, including suspension and/or expulsion, as may be appropriate, for failure to abide by these rules and regulations, or for other conduct adjudged unsatisfactory or detrimental to the University.

Financial Information



The cost of providing a legal education of the quality offered by Duke is high and has been steadily increasing. An annual report of the Law School explains in moderate detail what those costs are, and how they are met; a copy is available on request. As the report reveals, the Law School is substantially subvented by the University from its endowment sources. In addition, the Law School has some resources of its own, including generous annual giving support from its alumni. Nevertheless, the bulk of the cost of the program must be borne by the students who receive it.

Tuition

J.D., LL.B., and M.L.S. Candidates. For the academic year 1986-87, entering students in the J.D. program, transfer students, and candidates for the M.A. in Legal Studies will pay a full year's tuition of \$11,000. Students pursuing the J.D./M.A. or the J.D./LL.M. in the summer entering program will pay an additional \$3,660 in tuition for the summer term.

Subsequent years of study toward the J.D. program will be billed at the current tuition rate. In recent years, that rate has been significantly increased each year. Students in joint degree programs will be billed tuition at rates appropriate to their particular programs.

Entering students must pay their tuition in full before the first day of class and will receive no refund in the event of withdrawal. The reason for this policy is to discourage tentative enrollment which may have the effect of depriving another student of the opportunity to enroll. After the first semester, students are billed for their tuition on the first day of class; if they withdraw after the semester has commenced, they may be entitled to a substantial refund in accordance with University policy.

M.L.S. Candidates. Tuition for the one-year M.L.S. program is set at \$10,900 for 1986-87.

Graduate Degree Candidates. Students pursuing the L.L.M. degree will pay tuition of \$11,000 in 1986-87 for their single year of instruction. S.J.D. candidates must enroll for two years; tuition for the S.J.D. program for 1986-87 is set at \$11,000.

Other Fees

Late Registration Fee. Students who register in any semester at a date later than that prescribed are required to pay a \$25 penalty.

Student Health Fee. A student health fee of \$202 (\$101 per semester) is charged to all Duke University students. Optional health insurance is available at a cost of \$233

for a single student, \$650 for married student coverage. These figures are approximations.

Athletic Events Fee. Law students may secure admission to all regularly scheduled University athletic contests, with the exception of football and basketball, held on University grounds during the entire academic year free of charge. A fee of \$25 is charged for football events only and \$100 for football, basketball, and soccer. This fee is payable in the fall semester. Students may also use the facilities of the Duke golf course upon payment of student green fees.

Duke Bar Association Fee. A \$13 fee each semester is due and payable not later than the day of registration for a particular semester. This fee is utilized exclusively to support the activities of the student bar association.

Parking Fee. Students wishing to drive to the campus may register a car for the Law School's parking lot at an annual fee of \$30.

General Expenses

Applicants should be aware that the following general expense estimates were compiled in the spring of 1986, and for future years appropriate revisions may be necessary to reflect inflationary increases. It should also be recognized that the expenses of a Duke law student may vary considerably according to the style of living assumed, travel distance, and size of family, if any. With the above cautionary statements in mind, the following are the best estimates of total living costs for a nine-month academic year excluding tuition and fees: approximately \$9,500 for single students; approximately \$12,700 for married students; and approximately \$15,800 for married with one child. Included in the above cost-of-living estimates are current expense levels for lodging, board, books (approximately \$850 if purchased new), supplies, transportation, and personal effects. Applicants for scholarships and federal loans should be aware that their proposed budget figures cannot exceed the above amounts.

University Policies for Payment of Accounts

Payment of Accounts for Fall and Spring. The Office of the Bursar will issue invoices to registered students for tuition, fees, and other charges approximately four to six weeks prior to the beginning of classes each semester. The total amount due on the invoice is payable by the invoice due date which is normally two weeks prior to the beginning of classes. As part of the admission agreement to Duke University, a student is required to pay all invoices as presented. No deferred payment plans are available. If full payment is not received, a late payment charge as described below will be assessed on the next invoice and certain restrictions as stated below will be applied. Failure to receive an invoice does not warrant exemption from the payment of tuition and fees nor from the penalties and restrictions.

Penalty Charge. If the total amount due on an invoice is not received by the invoice due date, a penalty charge will be assessed from the billing date to the due date of that invoice. The penalty will be assessed on the subsequent invoice at an annual rate of 16 percent applied to the past due balance on that invoice. The past due balance is defined as the previous balance less any credits received and any payments received on or before the due date and also any student loan memo credits, related to the previous balance, which appear on the invoice.

Restrictions. An individual will be in default of this agreement if the total amount due on the student invoice is not paid in full by the invoice due date. An individual who is in default will not be allowed to register for classes, receive a copy of the

academic transcript, have academic credits certified, be granted a leave of absence, or receive a diploma at graduation. In addition, an individual in default may be subject to withdrawal from school.

Tuition Refunds. Tuition refunds are governed by the following policy:

1. In the event of death or a call to active duty in the armed services, a full tuition refund is granted.
2. First-year students withdrawing after the tuition due date for the summer or fall term are ineligible for any tuition refund.
3. In all other cases of withdrawal, students or their parents may elect to have tuition charges refunded or carried forward as a credit for later study according to the following schedule:
 - a. withdrawal before the beginning of classes—full refund;
 - b. withdrawal during the first or second week—80 percent;
 - c. withdrawal during the third through fifth week—60 percent;
 - d. withdrawal during the sixth week—20 percent
 - e. withdrawal after the sixth week—no refund; but
 - f. tuition charges paid from grants or loans will be restored to those funds and will not be refunded or carried forward.

Scholarship Assistance

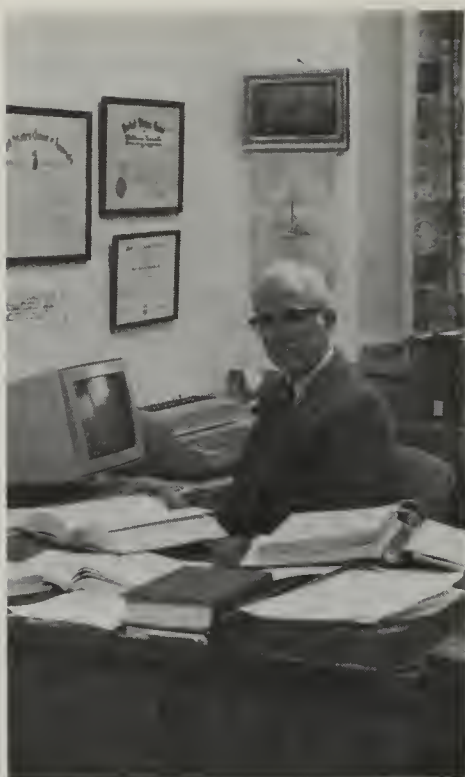
Professional education is expensive. Unfortunately, the Law School must rely upon students to bear the primary burden of this cost, with such help as they may receive from families, governments, or other organizations. The Law School, however, does provide a number of substantial scholarships to entering students.

Scholarship awards are generally made in the form of a contract committing the school to a total grant to be disbursed over the student's first five semesters of Law School. This schedule makes more money available early, when it is most needed, since summer savings and permanent job prospects lessen the financial burdens of most students in the third year.

Students seeking scholarship assistance should file a financial aid application at the same time they apply for admission. Most awards are made just following the admission decision, so that applicants may receive the earliest possible notice of the extent of scholarship support available. The fact that a student has applied for financial aid will not affect the decision on the application for admission.

Merit Awards. The Law School competes for students with several fine institutions which enjoy longer traditions of excellence. In order to assure each entering class that it will have a solid core of outstanding members who are admissible to any law school, many awards are made each year based primarily on merit. Merit, for this purpose, is usually defined as extraordinary academic promise manifested by grades *and* test scores which are substantially above the class medians. But the criteria for merit awards also include extraordinary achievement or unusual experience or background. It is not to be supposed that persons receiving such awards are more meritorious, in the broadest sense of that word, than many other entering students whose admissions credentials may seem a bit less unusual. Indeed, many students who do not receive merit awards will prove to be more deserving of praise as law students. But, it is believed, all students at the school are benefited by the solid assurance given that Duke law students as a group are among the ablest to be found anywhere.

While financial circumstance is a factor in awarding many of these scholarships, the primary purpose of these awards is to assure the quality of the entering class. Students receiving such awards are generally those who reasonably can be expected to make significant contributions to the community, by reason of their exceptional academic promise, extraordinary achievements, and valuable experience or background.



Need Awards. The Law School also provides a number of smaller scholarships that are intended primarily to aid those students who are most in need of financial assistance. In order to qualify for assistance of this kind, students must have a report prepared for the Law School by the Graduate and Professional School Financial Aid Service (GAPSFAS), Box 2614, Princeton, New Jersey 08540. In order to insure that full consideration of financial need is possible at the time when most of our scholarship funds are awarded, such students are also required to provide accurate information regarding family income and other relevant circumstances on the Duke financial aid application. Inclusion of parental information on the Duke form is mandatory, regardless of whether the student is technically considered "dependent" under federal guidelines. The Law School fully recognizes that many students are independent of their families for all purposes, but in choosing among competing student needs, those that cannot be met by parents will be accorded priority.

Endowed Scholarships. Many of the Law School's scholarships are funded from general endowment and other Law School revenues. However, some scholarship candidates are selected each year for support from one of several specially endowed scholarship funds. The criteria for these named awards vary; all students applying for aid will be considered for any special scholarships for which they may be eligible.

William Neal Reynolds Scholarships were established by the Z. Smith Reynolds Foundation in honor of the brother of R. J. Reynolds, the founder of the tobacco company.

Bunyon S. Womble Scholarships were established by the Womble family in honor of the founder of a North Carolina law firm.

James A. Bell Scholarships were established by the Bell family in honor of a federal judge.

Elvin R. Latty Scholarships were established by alumni and friends in honor of a former Dean of the Law School.

Dunspaugh-Dalton Foundation Scholarships were established by a Miami foundation.

Neill Blue Memorial Scholarships were established in memory of a law student who suffered a tragic death in 1971.

John R. Parkinson Scholarships were established by the Parkinson family.

Anna Pierce Stafford Scholarships were established in honor of members of the family.

South Carolina Law Alumni Scholarships were established by South Carolina Alumni.

The Marjorie Patrick Arnold Scholarship and the Giles-Rich-Stoner Scholarship were established by Hubert K. Arnold, of the Class of 1939, in honor of his wife and sisters, respectively.

The Charles H. Livengood Scholarship was established by the Livengood family and friends in honor of a former Duke law professor.

The Samuel Fox Gantt Scholarship was established by the Gantt family and friends in honor of a member of the Class of 1949.

Richard M. Nixon Scholarships were established by the Class of 1937 to honor their classmate, the former President of the United States.

Upperclass Awards

The great majority of available scholarship funds are allocated to entering students and to students continuing under a scholarship contract awarded at the time of admission. Thus, very little funding is available to supplement contractual awards, even in cases of high need. However, the Law School is able to offer a very limited number of awards to upperclass students who demonstrate substantial need that cannot be met through other sources. Such awards are made for one year only, and carry no right of continuation; all students who apply for aid each academic year are automatically considered for these scholarships, some of which are dependent on the student's performance in law school. In addition to such general endowment funds

as may be available from year to year, funding for upperclass scholarships comes primarily from four sources:

David H. Siegel Scholarships were established by Allen G. Siegel, of the Class of 1960, in memory of his father.

The Miller and Chevalier Charitable Foundation Scholarship was established by a Washington, D.C. law firm.

Jenny Ferrara Scholarships were established by Vincent L. Sgrosso, of the Class of 1962, in honor of his grandmother.

The Hunton and Williams Scholarship was established by the law firm of Hunton & Williams, through its Raleigh, North Carolina office.

Loan Assistance

Students who need loan funds to help finance their legal education must also submit a financial aid application at the time admission is sought. When applicants receive an offer of admission they will generally know the amount of scholarship assistance available and will be given a very tentative commitment of loan funds. However, a final determination of loan eligibility is generally not made until late spring or early summer after financial information is complete and governmental funds secure. Students requiring an earlier estimation of loan availability should consult directly with the Law School's financial aid office. The appropriate loan application and a request for any additional documentation required will be sent to the student when the student confirms his or her place in the entering class and accepts the financial aid offer.

Incoming students applying for loans administered or certified by Duke University must generally participate in the Graduate and Professional School Financial Aid Service (GAPSFAS), although students wishing to be considered only for the Federally Insured Student Loan Program may substitute a federal need analysis test. Students seeking loan assistance need not supply parental information on these forms, providing federal criteria for independent status are met. Information and application material for GAPSFAS may be obtained by writing to GAPSFAS, P. O. Box 2614, Princeton, New Jersey 08540. Forms for the next academic year are generally available in January, and should be completed and returned as soon as possible; six to eight weeks must be allowed for processing at the Princeton Center. Federal need analysis forms are available from the student's lending institution or from the Law School's financial aid office. GAPSFAS reports or completed need analysis forms should be received by the Law School no later than May 1 to avoid disadvantaging the student. Additional documentation, including income tax returns for the student and, if dependent, his parents, will be required at a later date.

At this time the following loan sources are either administered by Duke University or are available to Duke law students. Approval of any loan application is based on financial need and satisfactory scholastic standing.

National Direct Student Loan Program Loans. Loans are available to full-time Duke law students in good standing through the National Direct Student Loan (NDSL) Program, assuming the continuation of appropriations by Congress for this purpose. Interest on these loans, at a rate of 5 percent, begins to accrue six months after the student leaves the Law School, and repayment usually begins at that time. Complete repayment is scheduled over a period of up to ten years. Duke administers all NDSL loan funds allocated to it under strict federal guidelines dealing with such issues as the amount of parental income, reasonableness of budgets, complete disclosure of assets, and emancipation within the meaning of the applicable federal regulations. A GAPSFAS report is required to determine NDSL eligibility.

Federally Insured Student Loan Program (FISL/GSL). The future of the FISL/GSL program is uncertain, given the proposals made by the Reagan Administration. At this writing the program allows a full-time student in good standing with demonstrated need according to the GAPSFAS report or a federal need analysis to borrow up to \$5,000 per year at an interest rate of between 7 and 9 percent. Interest on these loans will be paid by the government while the student is in school. As with the NDSL, a six-month grace period after graduation is permitted before repayment must begin. A student will have a maximum of ten years following graduation or withdrawal from the University to repay the loan. A student seeking a FISL/GSL is required by Duke University first to apply for necessary funding to the appropriate governmental agency in the student's home state. If this agency denies the request, a letter from the agency certifying this determination must be submitted to the Law School which will then process the loan through an alternate lender.

ALAS Loans. The ALAS program supplements other federal programs by providing additional loan funds without regard to the student's personal or family resources. Loans of up to \$3,000 per year are guaranteed by the Higher Education Assistance Foundation, and carry a current interest rate of 12 percent. Loans made under the ALAS program are not eligible for the federal interest subsidy; interest payments are made on a monthly basis while the student is in school or, in some cases, added to the principal amount of the loan. A nonrefundable guarantee fee of 1 percent per year of the total loan amount will be collected in advance from the borrower by deducting it from the loan proceeds.

Work Study

The Law School also receives a limited amount of federal work-study funds each year. The school does not recommend that first-year students work, so these funds are reserved for second- and third-year students. A few positions using work-study funding are available each summer, usually at the Law School. Students must acquire these jobs on their own, then seek funding early in the spring from the financial aid office. Students need to be aware that since work-study is a type of federal aid, they are required to save 60 or 80 percent (depending on the city where they work) of their summer work-study earnings, and these savings become a part of the next academic year's aid package. Academic year work-study is automatically allocated as a part of the student's aid if funds are available.

Scholastic Standards



Grading

The Law School utilizes a numerical system of grading based on a 4.0 scale. The normal distribution of grades for an average class reflects the fact that very little grade inflation is practiced at the Law School. In any given year grades of close to 3.0 will put students well above the median for that class. The Law School does not rank its students prior to their graduation. However, each year statistics are compiled indicating what percentage of the members of each class fall within certain ranges on the basis of their cumulative grade point averages. The following statistics represent the distribution of *second* year grade point averages for over 500 students, 1982-85.

Cumulative GPA	Average Grades Second Year
3.500-4.000	1 %
3.250-3.499	10 %
3.000-3.249	23 %
2.750-2.999	30 %
2.500-2.749	19 %
Below 2.500	17 %

Most courses are generally available only on a graded basis. Independent research, ad hoc seminars and occasionally some other courses may be designated for credit/fail grading by action of the faculty. If a student has previously taken or audited a course for at least an eight-week period, or in other special circumstances, credit/fail grading may be required or authorized in an individual case at the discretion of the instructor and the Dean.

Other Standards and Rules

Like all academic institutions, the Law School is governed by scholastic standards and rules promulgated by the faculty, which cover such matters as eligibility to continue the study of law, academic probation, minimum and maximum course loads, examinations, and registration procedures. A complete copy of these rules is available for review in the Law School library.

Curriculum



First-Year Curriculum

MAJOR COURSES

110. Civil Procedure. A consideration of the basic problems of civil procedure designed to acquaint students with the fundamental stages and techniques of litigation—e.g., pleading, discovery, trial, appeal, judgments, and multiparty actions—and to introduce them to underlying problems such as jurisdiction, choice of law in a federal system, and the roles of courts as law-making institutions. *Metzloff or Rowe*

120. Constitutional Law. An examination of the distribution of and limitations upon governmental authority under the Constitution of the United States. Included are study of the doctrine of judicial review of legislative and executive action, the powers of Congress and the President, the limitations on state governmental powers resulting from the existence or exercise of congressional power, and judicial protection against the exercise of governmental power in violation of rights, liberties, privileges, or immunities conferred by the Constitution. *Van Alstyne or Dellinger*

130. Contracts. The formation and legal operations of contracts, their assignment, their significance to third parties, and their relationship to restitution and commercial law developments; the variety, scope, and limitations on remedies; and the policies, jurisprudence, and historical development of promissory liability. *Bernstein, DeMott, Haagen, or Weistart*

140. Criminal Law. An introductory study of the law of crimes and the administration of criminal justice, including analysis of the criminal act and the mental element in crime, consideration of specific offenses as defined by statute and the common law, and discussion of typical defenses in relation to specific crimes. One of the purposes of the course is to introduce the students to the nature of social control mechanisms and the role of law in a civilized society. *Beale, Enker, or Baxter-Rutledge*

160. Property. A study of the basic concepts of real property law and conveyancing, including historical background; estates in land, including the fee simple, the fee tail with its statutory substitutes, the life estate, the estate for years, and other non-freeholds; concurrent ownership; types of future interests; conveyances before and after the Statute of Uses; landlord and tenant; the modern deed—kinds, delivery, description, title covenants, and agreements running with the land at law and in equity; easements; and recording and title registration. *Maxwell, Reppy, or Sparks*

170. Torts. An analysis of liability for personal injuries and injuries to property. The law of negligence occupies a central place in the course content, but the course

also considers other aspects of tort liability such as strict liability, liability of producers and sellers of products, nuisance, liability for defamation and invasion of privacy, and commercial torts. The subjects of causation, damages, insurance (including automobile no-fault compensation systems), and workmen's compensation are also included. *Christie, Culp or Lange*

MINOR COURSES

150. Professional Advocacy. One-week intensive course in professional responsibility. *Metzloff, Oakes, Rubin, or Carrington*

190. Legal Writing and Advocacy. Following instruction in legal research, students write five to seven papers (from client letters to formal appellate briefs) under tutorial supervision of faculty member; at least one brief is argued orally. *Culp, Enker, Haagen, Reppy, Robertson, Rowe, Rutledge, Weistart, or Van Alstyne*

The Upperclass Curriculum

In the absence of special authorization from the Dean, each student is required to take in each semester courses aggregating not less than twelve and not more than sixteen semester-hours in order to be considered a full-time student for purposes of meeting the residency requirement for the J.D. degree.

The program in the second and third years is entirely elective. In planning his or her program, however, the student should bear in mind that certain more basic courses may be prerequisites to other more advanced courses, and that for this reason—as well as to avoid possible schedule conflicts—it is generally advisable to take these more basic courses in the second year.

To facilitate casual examination by the prospective admissions applicant, the upperclass curriculum is divided here into the following categories: (1) American Law and the Private Sector; (2) American Legal Institutions and Procedure, (3) Family Property and Relations, (4) Foreign and International Legal Studies, and (5) Legal Theory and History. Upperclass students are free to select courses without regard for these categories. A number of courses fall clearly into at least two categories and may therefore be listed twice; others could reasonably be listed in two or more categories, but are not.

Those offerings listed as courses are open to large enrollments. Those listed as clinical are limited to enrollment in order to permit close supervision of the professional work students are required to perform. Those listed as regular seminars are also limited in enrollment; research papers are generally required. Those listed as research tutorials are limited to a very few students in number and engage the students in research projects with the instructor.

Upperclass Courses

I. AMERICAN LAW AND THE PRIVATE SECTOR

400. Admiralty. An examination of the special body of law governing maritime affairs, especially the transportation of goods and passengers by water. Included in this coverage are admiralty jurisdiction, marine insurance, carriage of goods, charter parties, general average, rights of injured seamen and others, collision, salvage, maritime liens and ship mortgages, limitations and liability, and governmental activity in shipping. 3 s.h. spring. *Robertson*

205. Antitrust. A study of the federal antitrust laws and the policy of using competition to control private economic behavior. 4 s.h. spring. *Havighurst*

583. Antitrust Practice (Clinical Course). A study of selected current antitrust problems conducted by a professor and a former chairman of the Federal Trade Com-

mission. In addition to examining problems of current doctrinal and theoretical interest (e.g., vertical restraints, merger policy and joint ventures, standard setting and certification, implied exemptions, and professional self-regulation), the class will be given assignments of a practical (clinical) nature. Prerequisite: Antitrust. 2 s.h. (not offered 1986-87). *Collier*

207. Athletics and the Legal Process. An examination of legal relationships in professional sports as a basis for developing concepts about the nature of the legal process. To be examined are the respective roles of private contract, collective bargaining, and private and public litigation to resolve conflicts both between players and clubs and among clubs themselves. The major concepts to be applied will be drawn from the areas of labor, antitrust, and contracts law. (Normally offered only in alternate years. Requires prior or concurrent enrollment in Labor Relations.) 2 s.h. fall. *Wiestart*

325. Bankruptcy. A study of the methods by which conflicts between the financially distressed debtor and its creditors and conflicts among its creditors may be resolved under the liquidation or rehabilitation chapters of the Bankruptcy Reform Act of 1978. Prerequisite: Commerical Law or Secured Transactions or permission of the instructor. 4 s.h. fall. *Shimm*

595. Bankruptcy: Chapter 11 (Seminar). This seminar will examine selected aspects of the reorganization of financially distressed debtors. Prerequisite: Bankruptcy. 2 s.h. spring. *Shimm*

255. Basic Federal Income Taxation. An introduction to federal income taxation, with emphasis on the determination of income subject to taxation, deductions in computing taxable income, the character of the income realized, and the proper taxpayer on which to impose the tax. 4 s.h. fall. *Gann*. 4 s.h. spring. *Gann*

210. Business Associations. An examination of the state and federal law pertinent to corporations and, to a lesser extent, partnerships as business entities. Detailed attention is given to the legal ground rules for the life cycles of corporations—to their organization, preincorporation transactions, basic financial structure, internal governance arrangements, dissolution, and other fundamental changes. Further, a detailed study is made of those portions of the federal securities law that most closely affect the organic law of the corporation—federal regulation of the proxy system and of tender offers and federal restraints on inside trading and on certain other transactions in securities. 4 s.h. fall. *Cox*. 4 s.h. spring. *DeMott*

300. Business Planning (Clinical Course). Advanced work in corporation, partnership, and income tax law, securities regulation, and accounting. Attention is focused on a series of problems that commonly and currently face business lawyers in the formation and financing of business organizations; restructuring ownership interests and financing their withdrawal; sales and purchases of businesses; and merger and other enterprise combination, enterprise division, and dissolution. The problems are analyzed, and solutions are presented in class discussion and papers by an integrated approach that embraces the interplay of restraints posed by various areas of the law. Prerequisite: Corporate Taxation (may be taken concurrently). 3 s.h. (not offered 1986-87). *Pinna*

584. Collective Bargaining (Seminar). A comprehensive treatment of the legal and practical aspects of negotiating a collective bargaining agreement in both the public and private sectors. There is substantial student participation, together with practical demonstrations relating to arbitrations and typical bargaining problems. 2 s.h. fall. *Siegel*

554. Commercial Arbitration (Clinical Course). A concentrated lecture presentation of the fundamentals of construction law (two hours per week for three weeks),

followed by the students' preparation (four weeks) and presentation (six hours per day for two days in each of two weeks) of a construction arbitration. Two teams of up to six members each utilize the project documents of a recent case to develop practical skills in formulating the theory of the case, preparing the claims/defense manuals, demonstrative evidence and briefs, examining and cross-examining witnesses, and making opening and closing arguments. Three students act as arbitrators, conduct the hearings, rule on evidentiary matters, and render a written award. There is a "morning after" critique of each session. In addition, there is a placement for each student as a "law clerk" to an advocate or an arbitrator in an actual commercial arbitration being presented at the Private Adjudication Center. 3 or 4 s.h. spring. *Foster*

215. Commercial Law. An integrated study of the law governing commercial transactions and emphasizing the application of the Uniform Commercial Code, particularly the articles dealing with commercial paper, bank deposits and collections, and secured transactions. Topics that are given particular attention include the function and incidents of common forms of negotiable instruments, the mechanics of the bank collection process, and the operation of retail credit systems. 4 s.h. spring. *Shimm*

569. Commercial Practice (Clinical Course). A study of the professional tasks involved in the resolution of commercial disputes. Students are divided into small simulated law firms, each working under the supervision of a senior fellow who is a partner in a major law firm. Each firm receives a portfolio of problems to be handled throughout the year. The assigned tasks for each problem include legal analysis of the client's position, advice to the client, settlement negotiations with adversary counsel, preparation of briefs, and oral argument before a judge. The problems are prepared, and the work of the student firms largely evaluated, by external examiners who are associates in other major law firms. Enrollment is limited to thirty-six students and is subject to approval of the course administrator. 2 s.h. fall and 2 s.h. spring. *Pursley*

220. Construction Law. An interdisciplinary approach to the engineering (design), business, and legal aspects of construction problems, with students from both the engineering and business schools. The course examines these recurring relationships through class lectures and discussions of ten actual problems derived from the instructor's experience as a construction arbitrator and advocate. Participants are occasionally divided into teams who consider the problem cases, develop theories of presentation and evidentiary support, and attempt to resolve the problems variously through negotiation, mediation, arbitration, and litigation. Law students who have taken the course may enroll in the spring clinical seminar and placement in Commercial Arbitration. 2 s.h. fall. *Foster*

315. Corporate Finance. A consideration of the role and impact of financial analysis in the application and development of legal norms in connection with recurring corporate transactions. Coverage includes an investigation of the financial considerations arising in connection with valuation of a business corporation, rearrangement of the rights of creditors and stockholders in bankruptcy, establishment of dividend and reinvestment policies of publicly traded corporations, and measurement of the fairness and success of corporate acquisitions. 2 s.h. spring. *DeMott*

320. Corporate Taxation. A study of the special provisions of the Internal Revenue Code concerning the tax effects of the major events that occur in the life span of a corporation, including the taxation of distributions to shareholders and the formation, reorganization, and liquidation of corporations. Prerequisite: Basic Federal Income Taxation. 3 s.h. spring. *Schmalbeck*

359. Economic Analysis of Law. An exploration of diverse topics in law and economics such as property rights and externalities, tort law and optimal accident

prevention, bargaining and game theory, the economics of contracts, and theories of economic justice. 3 s.h. spring. *Meurer*

589. Economic Analysis of Patent Law (Seminar). The seminar will draw upon concepts from microeconomic theory to explore policy issues relevant to the design and implementation of an efficient patent system. A substantial portion of the seminar will be devoted to an examination of the conflict between antitrust law and patent law concerning the terms of patent licenses. Other topics to be studied include: the litigation and settlement of infringement suits, a comparison of trade secret law with patent law, and the scope of the disclosure requirement attendant to the patent grant. Our inquiry will emphasize consideration of the effect of patent institutions on the incentive to undertake research and development, and the costs to society of providing that incentive.

The necessary economic theory will be developed in the seminar, but a background in economics would certainly be helpful. Prerequisites: Antitrust law or intellectual property law, joint degree program in law and economics, or permission of the instructor. 2 s.h. (not offered 1986-87).

517. Employment Discrimination. A study of the law of employment discrimination, focusing mainly on federal law prohibiting race, sex, age, and handicapped discrimination. The course provides a basic knowledge of statutory coverage, standards, procedures and proof, and avenues of relief. Class discussion emphasizes important issues arising in current cases: for example, reverse discrimination versus affirmative action, the controversial "comparable worth" concept in equal pay litigation, and the "bottom line" defense to test invalidation. 2 s.h. fall. *Culp*

326. Entertainment Law I (Clinical Course). An introduction to selected theories, statutes, and regulations (other than intellectual property law) governing principal undertakings, business transactions, and legal relationships in the entertainment industry, including publishing, the theater, television and motion pictures, music, and related fields. 2 s.h. fall. (Normally offered in alternate years. Requires concurrent or prior enrollments in Intellectual Property I and II.) *Lange*

327. Environmental Law. A study of major policy and legal issues raised by efforts to manage environmental harms and pressure ecological systems. Emphasis in the course is on recurring themes and conflicts, and on the economic, social, ecological, and political assumptions that underlie the different responses that have been proposed. 3 s.h. spring. *Schroeder*

518. Federal Tax Policy (Seminar). Structure, incidence, and economic effects of major federal taxes. Special attention to problems of inflation, income definition, and distortions of economic incentives in the areas of savings and investment. Prerequisite: Basic Federal Income Taxation. 3 s.h. spring. *Schmalbeck*

250. Financial Information, Accounting, and the Law. Many attorneys are required to evaluate financial data, notably financial statements from corporations, on a regular basis. The need is not limited to corporate attorneys; indeed litigators in securities, antitrust, malpractice, or general commercial litigation frequently must analyze financial information. Proper evaluation requires a familiarity with accounting principles and practices. This course serves to both introduce basic accounting principles as well as to study a number of contemporary accounting problems relating to financial disclosure. An optional third hour, available to a limited number of students for independent study, will concentrate on analyzing relevant characteristics of the accounting profession including: (1) standard setting; (2) professional ethics; and (3) liability principles. 2 s.h. fall. *Metzloff*

337. Health Care Law and Policy. A survey of the legal environment of the health services industry in a policy perspective, with particular attention to the tensions

and trade-offs between quality and cost concerns. Topics for study include manpower policy and licensure; private personnel credentialing and institutional accreditation; hospital staff privileges; malpractice liability; health planning and certificate-of-need regulation; hospital reimbursement and rate setting; public and private methods of rationing medical care; health insurance and alternative financing and delivery systems; and the emerging role of competition and antitrust law. The course should be of interest to students interested in public policy and in law and economics as well as those with specific interests in the health care field. 3 s.h. spring. *Havighurst*

229. Insurance Law. An examination of the nature of insurance and the insurance contract. Possible topics include: the role of risk classification, marketing, the principle of indemnity and the notion of an insurable interest, subrogation, the risks transferred, rights at variance with policy provisions, claims processes, and justifications for and the nature of regulation of insurance institutions. 2 s.h. fall. *Bernstein*

357. Intellectual Property I: Law and the Arts. An introduction to the principal theories of intellectual property in the fine arts and in the entertainment and sports industries. Includes comprehensive instruction in copyright, unfair competition, and the right of publicity, as well as selective coverage of other doctrines. 2 s.h. fall. *Lange*

367. Intellectual Property II: Business Intellectual Property. An introduction to trademark and patent law licensing and the law of trade secrets, as well as selective coverage of other subjects in conventional business and industrial settings. Prerequisite: concurrent enrollment in Intellectual Property I. 1 s.h. fall. *Lange*

607. Intellectual Property III (Tutorial). Research and writing on selected topics in intellectual property. Limited availability; permission of the instructor required. 3-6 s.h. fall and spring. *Lange*

240. Labor Relations. A study of the law of labor-management relations, centering upon the National Labor Relations Act, as amended. The course investigates problems involved in the regulation of industrial conflict (strikes, picketing, boycotts, and unfair labor practices by employers), the establishment of the collective bargaining relationship, the negotiation and enforcement of the collective agreement, the arbitration of disputes under the agreement, the relationship between the union and its members, and the protection of individual and minority rights. 3 s.h. fall. *Horowitz*

608. Labor Relations II (Tutorial). Directed research in advanced labor problems. Topics may include: the fit between legal rules and workplace conditions, the aptness of National Labor Relations Board procedures, the relations between rights afforded by collective agreements and those guaranteed by law, and the implications of the division between unionized and nonunionized sectors. Prerequisite: strong background in labor law and consent of the instructor. 3 s.h. fall and 3 s.h. spring. *Horowitz*

396. Oil and Gas. A study of the law governing the recognition and protection of property interests in oil and gas in natural reservoirs and an analysis of the transactions, particularly the oil and gas lease, by which the right to produce oil and gas is purchased. Although the course is focused on the private law problems of landowners and firms interested in mineral development, the legal problems and policy implications of government intervention for conservation and for economic regulation are considered. 3 s.h. fall. *Maxwell*

593. Professional Liability (Seminar). The past fifteen years have seen a significant increase in the number, as well as the complexity, of claims asserted against professionals. The potential liability of attorneys, accountants, doctors, architects, and other "professionals" is a matter of great importance given the significant resources expended in providing professional services in the United States. This course

will analyze the contours of liability principles in professional malpractice cases in the context of the legal, medical, and accounting professions. In addition, the course will study the interaction of malpractice cases with professional ethics and the theory of self-regulation. 3 s.h. fall. *Metzloff*

365. Real Estate Financing. An examination of the law governing transactions in which land is used as security for a debt. The course will focus on the law of a single jurisdiction to allow students to work with the subject in a systematic and realistic fashion. Although most of the materials used will come from the legal system of California, reading assignments will also be made in a general textbook. Prerequisite: Commercial Law. 3 s.h. fall. *Maxwell*

370. Regulated Industries. A study of government economic regulation and deregulation in such regulated industries as transportation, electric power, telephone, broadcasting, oil and gas, and health care, with emphasis on control of entry, mergers, and rates, and on the interface between regulation and the antitrust laws. 3 s.h. (not offered 1986-87). *Havighurst*

375. Securities Regulation. A study of the federal and state securities laws and the industry they govern with emphasis on the regulation of the distribution process and trading in securities; subjects dealt with include the functions of the Securities and Exchange Commission, registration and disclosure requirements and related civil liabilities, "blue-sky" laws, proxy solicitation and reporting requirements, broker-dealer regulation, the self-regulatory functions of the exchanges, and the regulation of investment companies. 3 s.h. fall. *Cox*

376. Securities Regulation II. (Seminar). The seminar will meet eight times during the spring 1987 semester [Friday p.m./Friday p.m. and Saturday a.m.]

The class will focus on selected current issues in securities regulation and financial institution regulation. The selected issues will be explored in fact-specific settings from a client-oriented perspective. One of the fact settings will involve a complete review of a major corporate transaction, such as an acquisition, recapitalization or leveraged buyout. Emphasis will be placed on identifying the specific legal issues involved and evaluation of the range of alternatives available to the client to achieve its business objective.

The selected current issues will include some of the following issues: share purchase rights plans (so-called "poison pills"); recapitalizations as anti-takeover defenses; inadvertent investment companies; formation of an investment company; acquisition of financial institutions; interstate banking expansion; issuer repurchases of its own securities; management sponsored leveraged buyouts; innovative financial instruments, (e.g., collateralized securities, zero coupon notes, adjustable rate preferred); issues involved in negotiated acquisitions of public companies, including disclosure at merger negotiated acquisitions of public companies, including disclosure at merger negotiation and lock-ups.

Course work will include about five memoranda of three to five pages each. Three of the memoranda will be done on a team basis, with each team consisting of three students. 3 s.h. spring. *Hart*

644. Securities Regulation III (Research Tutorial). The seminar will carry one (1) unit of credit in the fall and two (2) units of credit in the spring. Students must enroll in each semester and there is a limit of six students. Students will work closely with Professor Cox in preparing textual material for a forthcoming book on securities regulation. Students will select two or three topic areas each to be examined in an extensive memorandum. Among the topics are broker-dealer obligations under the securities laws, national market system, scope of Investment Company Act and Investment Advisors Act, securities underwriting practices, regulation of broker-

dealers by membership organizations, the meaning of distributions, and the section 5 obligations of control persons. 1 s.h. fall and 2 s.h. spring. *Cox*

II. AMERICAN LEGAL INSTITUTIONS AND PROCEDURES

200. Administrative Law. A study of administrative agencies and legislative authority, information gathering and withholding, rule-making and order-formulating proceedings, judicial review of administrative action, and constitutional limitations on administrative powers. 3 s.h. fall. *Baxter*

380. Civil/Criminal Trial Practice (Clinical Course). An introduction to the civil and criminal litigation process and attendant skills. The course emphasizes the interactions between attorneys and their clients and between lawyers and juries by use of simulation and videotape pedagogy. Areas of inquiry include trial preparation, opening statements, closing arguments, evidentiary objections, and direct- and cross-examination of lay and expert witnesses. Each student completes the course requirements by participating as counsel in a full jury trial. Prerequisite: Evidence. 3 s.h. fall. *Beskind*; 3 s.h. spring. *Hutchinson, Swinson, Becton*

310. Conflict of Laws. A study of the special problems that arise when the significant facts of a case are connected with more than one jurisdiction, including recognition and effect of foreign judgments, choice of law, federal courts and conflict of laws, and the United States Constitution and conflict of laws. 3 s.h. spring. *Reppy*

550. Constitutional History. A three-part course, the first part is devoted to the Constitutional Convention of 1787 and the surrounding events. The second part focuses on the institutions of slavery and the law before and after the Civil War. The third part focuses on the New Deal and its relations with the Supreme Court. 2 s.h. fall, 2 s.h. spring. *Dellinger, Leuchtenburg, and Franklin*

521. Criminal Litigation (Clinical Course). An examination of the lawyering process in criminal cases from the point of view of the criminal justice practitioner. Using videotape simulation, students will participate as attorneys in simulations of various stages of criminal justice process from initial interview through trial, with special emphasis on pretrial proceedings. The clinical phase of the seminar requires each student to practice with criminal justice practitioners pursuant to the North Carolina Rules Governing Practical Training of Law Students. Placements include district attorneys, the public defender, and private defense counsel. Prerequisites: Criminal Procedure: Police; Evidence; and Trial Practice. 4 s.h. spring. *Mosteller*

223. Criminal Procedure: Formal. A study of the basic rules of criminal procedure, beginning with the institution of formal proceedings. Subjects to be covered include prosecutorial discretion, the preliminary hearing, the grand jury, criminal discovery, guilty pleas and plea bargaining, jury selection, pretrial publicity, double jeopardy, the right to counsel, and professional ethics in criminal cases. 2 s.h. spring. *Everett*

222. Criminal Procedure: Police. A study of the legal restrictions on police investigative practice which typically proceeds the institution of formal proceedings, with special emphasis upon "stop and frisk," arrest, search and seizure, confession suppression, lineups, electronic surveillance, and operation of the exclusionary rule. 2 s.h. spring. *Mosteller*

385. Criminal Trial Practice (Clinical Course). An introduction to the trial process through the criminal trial and development of attendant skills. The course emphasizes the interactions between lawyers and judges and juries by use of simulation exercises and videotape review. The traditional areas of inquiry in trial practice will be covered in this course through the vehicle of the criminal trial process. They

include trial preparation, jury selection, opening statements, evidentiary objections, and direct and cross-examination. In addition, substantive materials from Criminal Procedure: Police will be treated through litigation of motions to suppress tangible evidence, statements, and identification under the Fourth and Fifth Amendments. In this portion of the course, students will be expected to conduct investigation, analyze facts, write motions and legal memoranda, and litigate suppression hearings. Trial tactics and strategy will be carefully examined. The course culminates in a full jury trial with each student participating as counsel. Prerequisites: Evidence and Criminal Procedure: Police. 4 s.h. fall (not offered 1986-87).

225. Evidence. A study of the theory and rules governing the presentation of evidence to a judicial tribunal, including the function of the judge and jury; the concept of relevancy; character evidence; judicial notice; real and demonstrative evidence; authentication of writings; the best evidence rule; competency, impeachment, and rehabilitation of witnesses; hearsay and the exceptions to its exclusion; and privileged communications. 3 s.h. fall. *Mosteller*; or 3 s.h. spring. *Pye*

555. Federal Appellate Practice-A (Clinical Course). This course includes study of appellate practice and procedure in the federal courts and instruction in oral advocacy and brief writing. Students argue a difficult appeal to an experienced judge. Students who excel are selected for the Moot Court Board, competition for the Dean's Cup, and interscholastic competition in appellate advocacy. 2 s.h. fall. *Friedman, Phillips, and staff*

500. Federal Civil Rights (Seminar). A study of advanced constitutional law and federal practice, working through a series of problems to provide: (a) familiarity with the principal federal statutes (procedural, substantive, and remedial) used in civil rights litigation; (b) their judicial interpretation and application; and (c) a consideration of frontier constitutional issues. 3 s.h. (not offered 1986-87).

340. Federal Courts. A study of the many ways in which federalism affects the workings of the federal courts and their relations with other branches and the states. The course covers the jurisdiction of the federal courts, original and appellate—the constitutional scope of Article III, justiciability, Congressional authority to define and limit, federal question and diversity jurisdiction, removal, pendent and ancillary jurisdiction, and abstention; some aspects of the law applicable in federal court—*Erie*, and civil rights actions and immunities; and judgments—direct review of state and federal decisions, federal-state res judicata, and collateral attack via habeas corpus. 3 s.h. spring. *Rowe*

568. Federal Courts and the Appellate Process (Federal Appellate Practice B). A study of select problems and issues concerning the appellate process in the federal court system. The course is designed to provide a significant clinical experience in appellate advocacy, and the opportunity to work on an applied research and writing project, along with traditional in-class lectures and discussions. Constitutional Law is a prerequisite. Students taking the course will also find it helpful to have taken Administrative Law.

The class will cover a number of related topics, focusing principally on the work of the U.S. Courts of Appeal and (to a lesser degree) the U.S. Supreme Court. Substantive coverage will include: "jurisdictional" issues of particular interest at the appellate level; final orders and interlocutory appeals; "standing" and "ripeness" issues; prudential considerations militating against appellate review; waiver of appealable issues; the proper scope and standard of review (with emphasis on administrative agency appeals); and the remedial authority of the courts. In addition, the course will deal with certain practical problems of advocacy and judicial administration (such as: when and what to appeal, preparation of appellate briefs, oral advocacy,

dispute settlement techniques, decision-making processes, and special institutional problems facing appellate judges).

There will be no final examination; however, each student will be assigned to write a brief and argue one federal appellate case and to judge another such case. In addition, each student will be required to complete a paper of limited length dealing with some important aspect of the federal appellate process.

The class normally will meet for two hours, once a week at a fixed time. There will be occasions, however, when classes are rescheduled (to meet on two consecutive days) to take account of Judge Edwards' judicial schedule and to allow adequate time for students' oral arguments. 4 s.h. fall. *Edwards*

343. Federal Criminal Law. This course deals with the enforcement of federal criminal statutes including those relating to tax fraud, mail fraud, civil rights, drug enforcement, the Hobbs Act, the Travel Act, and the Racketeer-Influenced and Corrupt Organizations (RICO) Act. The limits on federal criminal jurisdiction and legal issues arising out of the overlap of federal and state law will also be examined. 2 s.h. (not offered 86-87)

344. First Amendment. The basic constitutional law of the free speech-free press clause and the church-state clauses of the first amendment. 2 s.h. fall. *Van Alstyne*

561. Forensic Psychiatry (Clinical Course). This course is designed to provide the student with a working knowledge of the major areas of interface between psychiatry and law. Basic concepts of clinical psychiatry and psychopathology will be highlighted throughout the course. The attorney and the psychiatrist roles in the commitment process, right to treatment and right to refuse treatment, competency to stand trial, and criminal responsibility will be explored using a number of methods. Discussion of assigned readings, short lectures, interviews and observation of patients involved in legal proceedings, films, guest speakers, and field trips will form the basis of the course. The students will periodically be asked to use the information from the course together with independent and group research to complete short projects and class exercises. 3 s.h. spring. *Johnson*

558. Habeas Corpus and Criminal Appeals (Clinical Course). Examination of post-conviction remedies in the Fourth Circuit; preparation of an appellate brief for a state or federal case; analysis of habeas petitions pending in federal district courts and participation in habeas cases which proceed to plenary hearings; drafting of an opinion in a federal habeas case. Enrollment limited to eight students. 2 s.h. (not offered 1986-87).

648. U.S. Fourth Circuit History (Tutorial). Research for the bicentennial history of the United States courts of the Fourth Circuit from 1789 to the present. Individual research and group discussion on the development of judicial institutions and law in this southern circuit. 3-6 s.h. fall and spring. *P. Fish*

534. Judicial Administration. Examination of the judicial function in relation to historical and contemporary politics of court organization, management, and procedures as well as of selection and discipline. Focus is on American federal judicial system with references to state and comparative aspects of adjudication-administration. Two required ten-page papers or weekly assigned reserve readings are due for seminar meeting devoted to discussion of those readings. With permission of the instructor a student may write an additional paper of substantial length on course subject matter, and will receive 2 or 3 s.h. (not offered 1986-87).

552. Religion and Law (Seminar). Interdisciplinary investigation of the impact of first amendment doctrine on religious organizations; the legal rights and moral

obligations of clergy in questions involving the application of the testimonial privilege based on the priest-penitent relationship; state regulation of cult groups; attempts by religious groups to counter the secularization of law in areas such as abortion, sexual preference, and censorship; comparison of the concepts "punishment" and "sin." Readings will include case law, statutes, and writings by legal and religious commentators. Additionally, teams of students will study one topic in depth and make an oral presentation to the class. There is no final examination. 2 s.h. (not offered in 1986-87.)

540. Legislation (Seminar). A study of the factors involved in the development and passage of legislation, and in its interpretation by the courts. Topics covered include theories of legislation, legislative procedure and process, problems in drafting statutes, compilation of legislative histories, and determination of legislative intent. A research paper is required. 2 s.h. spring. *Danner*

571. Negotiation (Clinical Course). An examination of the lawyer's role as a negotiator in seeking to resolve legal disputes without resort to full adjudication. The course focuses on techniques, tactics, ethics, and other aspects of the negotiation process. Students are divided into teams which compete with each other in seeking to negotiate settlements in a series of simulated disputes involving such matters as commercial transactions, personal injury claims, real estate transactions, antitrust litigation, and labor relations. Enrollment limited to twenty-four. 2 s.h. spring. *Hutchinson*

593. Professional Liability (Seminar). The past fifteen years have seen a significant increase in the number, as well as the complexity, of claims asserted against professionals. The potential liability of attorneys, accountants, doctors, architects, and other "professionals" is a matter of great importance given the significant resources expended in providing professional services. This course will analyze several major issues in this field including the interaction of professional liability with (1) regulatory and disciplinary proceedings, (2) marketing efforts by the professional and (3) the advent of specialization in the profession. It will also focus on specific liability principles controlling the accounting, legal, and medical professions. 3 s.h. fall. *Metzloff*

532. Remedies. A survey of the law of judicial remedies in civil litigation, with illustrative applications in various areas of private and public substantive law. The course covers the main types of remedies—compensatory and punitive damages, equitable relief including injunctions and specific performance, declaratory judgments, and restitution, considering both their basic characteristics and their interrelations. Illustrative applications are drawn primarily from the substantive fields of tort (injury to persons and to personal and real property), contract, and civil rights. Normally offered in alternate years. 2 s.h. (not offered 1986-87).

III. FAMILY PROPERTY AND RELATIONS

536. Child Advocacy (Clinical Course). A two-semester practicum in child advocacy. Students will be assigned to represent children in abuse and neglect cases in Durham County, under the supervision of members of the Durham bar and the course instructor, pursuant to the North Carolina Rules Governing the Practical Training of Law Students. Students will gain experience in interviewing, counseling, negotiation, case planning, trial practice, motion practice, and some discovery. In addition to work on actual cases, students will participate in a classroom seminar, in which the practical and ethical considerations involved in representing children will be explored. Medical doctors, social workers, psychologists, judges, and attorneys will participate in the seminar sessions. Simulated exercises will be used to sharpen advocacy skills. Must be taking or have taken Family Law and Trial Practice.

Must also be a third-year student in good academic standing. Class limited to nine students. 2 s.h. fall and 2 s.h. spring. *Bartlett*

218. Community Property. A survey of the marital property laws of Arizona, California, Idaho, Louisiana, Nevada, New Mexico, Texas, Washington, and Wisconsin, with comparison to the Spanish system. Students may concentrate their studies on the law of one of the nine states. 2 s.h. spring. *Reppy*

330. Estate and Gift Taxation. A study of the rules governing federal taxation of wealth transfers. Prerequisite: Basic Federal Income Taxation (may be taken concurrently). A prior or concurrent enrollment in Trusts and Wills is recommended. 3 s.h. fall. *Adams*

515. Estate Planning (Clinical Course). An examination of the problems and techniques of estate planning and administration, including the income taxation of trusts and estates. Students prepare planning recommendations and draft related documents for hypothetical clients. Prerequisites: Basic Federal Income Taxation, Corporate Taxation (can be taken concurrently); Estate and Gift Taxation and Trusts and Wills; students taking Future Interests as well will be given preference in enrollment. 3 s.h. spring. *McCaughan*

335. Family Law. A study of legal issues relating to the family, including marriage, unmarried cohabitation, divorce, procreation and abortion, child custody, and the relationship between parent, child, and state. 3 s.h. fall. *Bartlett*

646. Feminist Legal Theory (Tutorial). Selected topics in feminist legal theory, with a focus on its application to child custody law. Limited to three, by application to professor. 3-6 s.h. fall. *Bartlett*

265. Future Interests. An examination of the following considerations in non-commercial property dispositions: class gifts and other issues in will construction; powers of appointment; classification of future interests; and rules against perpetuities, accumulations, and restraints on alienation. 3 s.h. fall. *Sparks*

270. Trusts and Wills. An examination of noncommercial property dispositions, both testamentary and *inter vivos*, including the following topics: the estate system, intestate succession, execution and revocation of wills, creation of trusts, ademption and lapse, integration of dispositive schemes, charitable trusts, resulting and constructive trusts, remedies for wrongful interference with succession and transfer, and problems in trust administration. 3 s.h. fall. *Sparks*; or 3 s.h. spring. *Adams*

IV. FOREIGN AND INTERNATIONAL LAW

290. American Law and Legal Research for International Students (Seminar). This course consists of two components conducted simultaneously. The first is a series of lectures by members of the Law School faculty on various aspects of the legal system of the United States and may include required readings. The second is in the form of a research and writing tutorial designed to introduce international students to the techniques of case and statutory analysis as well as the tools and methods of legal research. Students are expected to complete written assignments and memoranda of law. 2 s.h. fall. *Luney and Robertson*

514. Chinese Law and Society (Seminar). This course will survey Chinese legal thought and practice in the People's Republic of China. Particular attention is focused on the relation of law to social ideals, to social change, and to politics. The course will consider socialist theories of law, conventional criminal and civil processes, informal and extrajudicial institutions, international law, and trade law. Prior familiarity with Chinese history or politics is unnecessary. 2 s.h. spring. *Ocko*



513. Chinese Legal History (Seminar). This course will survey Chinese legal thought and practice in the People's Republic of China. Particular attention is focused on the relation of law to social ideals, to social change, and to politics. The course will consider socialist theories of law, conventional criminal and civil processes, informal and extrajudicial institutions, international law, and trade law. Prior familiarity with Chinese history or politics is unnecessary. 3 s.h. (not offered 1986-87).

649. Civil Law Research (Tutorial). This tutorial will give students the opportunity to familiarize themselves with civil law materials while studying aspects of civil law in a comparative law perspective. A substantial research project will require the use of original language materials. The technique of comparative law analysis will be discussed. Insight will be provided into both the thinking and institutions found in legal systems based upon systematic codes and legal traditions that are different from those in the common law countries. Prerequisites: Comparative Law: Western Legal Traditions; reading knowledge of French or German. 2 s.h. spring. *Germain*

306. Comparative Administrative Law (Seminar). An introduction to the comparative study of the major systems of administrative law in the West. The seminar is designed to introduce students to public law institutions and practices in systems substantially different from their own, to relate this knowledge to American law in order to enhance the student's understanding of the latter, and to place the rules and institutions of administrative law within their broader political, social, and ideological contexts. It will commence with an introduction to comparative methodology in the public law context. The second part comprises a macro-survey of the British, French, American, German, and Australian systems. Finally some specific topics will be selected for more detailed, micro-comparison. Prerequisites: Prior or concurrent enrollment in Administrative Law. 2 s.h. spring. *Baxter*

307. Comparative Law: Common Law Traditions (Seminar). This course (which will be based on a book in preparation) will focus on different approaches to law in England and America, as well as differences in their traditional legal theories. In particular, it will explore the more formal approach to law in England in connection with differences in legal sources, common law, and statute law. The course will then explore the relationship between these differences and some of the institutional differences between the courts, the judges, the legal professions, and the law schools in the two countries. There are no prescribed texts but course materials will be available. 2 s.h. spring. *Atiyah*

308. Comparative Law: Legal Institutions in India (Seminar). 3 s.h. spring. *Baxi*

305. Comparative Law: Western Legal Traditions. A study of civil law, common law, and socialist law, focusing on legal institutions, legal actors, their roles and backgrounds. The course will examine the shared Western legal and intellectual heritage and analyze selected problem areas. 3 s.h. fall. *Bernstein*

572. Comparative Public Law and Policy: Ethnic Group Relations (Seminar). An interdisciplinary seminar to appraise various approaches to the reduction of conflict in deeply-divided societies, primarily in Asia and Africa. Substantial attention will be paid first to the nature of ethnic identity, the sources of group conflict, and the forms and patterns it takes. Consideration will be given to methods of analyzing social science materials and utilizing them for the design of policies, laws, and institutions. Approaches considered include federalism, regional autonomy, electoral law, parliamentary and presidential arrangements, and programs to prefer under-represented ethnic groups in education, employment, and other spheres of economic activity. Emphasis will be placed on forecasting and evaluating the impact of alternative approaches. 3 s.h. fall. *Horowitz*

345. International Business Transactions. This course examines various topics related to the conduct of international business. Subjects covered are international private trade, including private international contracts, dispute resolution, and letters of credit; national and international regulation of trade in goods, including the GATT; and international regulation of monetary affairs through the IMF; foreign direct investment; and transfer of technology. 3 s.h. spring. *Gann*

230. International Law. An introduction to the public international law of peace, including the nature and sources of international law; its place in national and international decision making; the roles of international organizations, states, and individuals in the international legal system; bases and limitations of jurisdiction; the utilization and interpretation of treaties and other international agreements; and some aspects of the regulation of economic activity within the international system. 3 s.h. fall. *Robertson*

232. International Organizations. An examination of the legal issues involved in the structure, functions, and operations of the United Nations and other international organizations within the international system. 2 s.h. (not offered 1986-87).

557. International Taxation. An examination of the federal income tax imposed on income earned in foreign countries either by citizens and residents of the United States or by foreign corporations that are controlled by citizens and residents of the United States. The course also includes a study of the federal income tax imposed on nonresident aliens and foreign corporations on their income derived from United States sources. Prerequisites: Personal Income Taxation, Corporate Taxation (may be taken concurrently), or permission of the instructor. 2 s.h. (not offered 1986-87).

647. Japanese Public Law (Tutorial). Introduction to the Japanese public law system with emphasis on the organization and role of the Japanese government, legal principles that govern the decision-making process, judicial review of government actions, and the dichotomy between public law and private law in Japan. 3 s.h. spring. *Luney*

366. Jewish Law (Seminar). Study of factors (cultural and juristic) in the development of Jewish law, especially in the Talmudic and medieval periods; relationship between "religious" and "civil" law; the legal codes and the decision-making process of the rabbinic courts. Some legal texts (in translation) will be submitted to intensive examination. 3 s.h. (not offered in 1986-87).

235. Jurisprudence. A historical examination of the development of legal philosophy from ancient times to the contemporary period. 3 s.h. fall. *Christie*

640. Law and National Defense. A study of military jurisdiction; martial law; law of war; civil court review of military actions; power of commanders over military installations; status of forces agreements; operations law; antiterrorist measures and legislative process. 2 s.h. fall. *Everett*

620. Law of the Sea (Seminar). An examination of the legal problems resulting from uses of the seas and the efforts made toward resolution of those problems. The seminar's focus is on the jurisdictional problems created by the competing claims of nation-states to competence as to the territorial sea, the continental shelf, the contiguous zone, economic zones, and the seabed. These claims are examined in the context of specific uses of the seas, including navigation, military, fishing, extraction of minerals, and scientific research. Prerequisite: International Law (may be taken concurrently). 2 s.h. (not offered 1986-87).

590. Legal Implications of the Control of Terrorism (Seminar). This seminar will explore implications under domestic and international law arising from efforts to control terrorism. Special attention will be devoted to the problem of defining

terrorism; the use of military forces; the status of terrorists under international law; domestic limitations upon gathering of strategic intelligence; efforts to deal with terrorists through treaties and the United Nations. Prerequisites: Criminal Procedure-Police and International Law. 2 s.h. fall. *Pye*

V. LEGAL THEORY AND HISTORY

415. American Legal History. A study of the development of American public and private law from the colonial period to the present. Examination. 3 s.h. spring. *Haagen*

513. Chinese Legal History (Seminar). This course will survey Chinese legal thought and practice in the People's Republic of China. Particular attention is focused on the relation of law to social ideals, to social change, and to politics. The course will consider socialist theories of law, conventional criminal and civil processes, informal and extrajudicial institutions, international law, and trade law. Prior familiarity with Chinese history or politics is unnecessary. 3 s.h. (not offered 1986-87).

306. Comparative Administrative Law (Seminar). An introduction to the comparative study of the major systems of administrative law in the West. The seminar is designed to introduce students to public law institutions and practices in systems substantially different from their own, to relate this knowledge to American law in order to enhance the student's understanding of the latter, and to place the rules and institutions of administrative law within their broader political, social and ideological contexts. It will commence with an introduction to comparative methodology in the public law context. The second part comprises a macro-survey of the British, French, American, German, and Australian systems. Finally some specific topics will be selected for more detailed, micro-comparison. Prerequisites; Prior or concurrent enrollment in Administrative Law. 2 s.h. spring. *Baxter*

307. Comparative Law: Common Law Traditions (Seminar). This course (which will be based on a book in preparation) will focus on different approaches to law in England and America, as well as differences in their traditional legal theories. In particular, it will explore the more formal approach to law in England in connection with differences in legal sources, common law, and statute law. The course will then explore the relationship between these differences and some of the institutional differences between the courts, the judges, the legal professions, and the law schools in the two countries. There are no prescribed texts but course materials will be available. 2 s.h. spring. *Atiyah*

308. Comparative Law: Legal Institutions in India (Seminar). 3 s.h. spring. *Baxi*

305. Comparative Law: Western Legal Traditions. A study of civil law, common law, and socialist law, focusing on legal institutions, legal actors, their roles and backgrounds. The course will examine the shared Western legal and intellectual heritage and analyze selected problem areas. 3 s.h. fall. *Bernstein*

572. Comparative Public Law and Policy: Ethnic Group Relations (Seminar). An interdisciplinary seminar to appraise various approaches to the reduction of conflict in deeply-divided societies, primarily in Asia and Africa. Substantial attention will be paid first to the nature of ethnic identity, the sources of group conflict, and the forms and patterns it takes. Consideration will be given to methods of analyzing social science materials and utilizing them for the design of policies, laws, and institutions. Approaches considered include federalism, regional autonomy, electoral law, parliamentary and presidential arrangements, and programs to prefer under-represented ethnic groups in education, employment, and other spheres of economic activity. Emphasis will be placed on forecasting and evaluating the impact of alternative approaches. 3 s.h. fall. *Horowitz*

654. Constitutional History II (Tutorial). Supervised research and writing tutorial. Selected topics in constitutional history. 1 s.h. fall and 1 s.h. spring. *Dellinger*

550. Constitutional History. A three-part course, the first part is devoted to the Constitutional Convention of 1787 and the surrounding events. The second part focuses on the institutions of slavery and the law before and after the Civil War. The third part focuses on the New Deal and its relations with the Supreme Court. 2 s.h. fall, 2 s.h. spring. *Dellinger, Leuchtenburg, and Franklin*

359. Economic Analysis of Legal Issues. An exploration of diverse topics in law and economics such as property rights and externalities, tort law and optimal accident prevention, bargaining and game theory, the economics of contracts, and theories of economic justice. 3 s.h. spring. *Meurer*

589. Economic Analysis of Patent Law (Seminar). (Not offered 1986-87.)

366. Jewish Law (Seminar). Study of factors (cultural and juristic) in the development of Jewish law, especially in the Talmudic and medieval periods; relationship between "religious" and "civil" law; the legal codes and the decision-making process of the rabbinic courts. Some legal texts (in translation) will be submitted to intensive examination. 3 s.h. (not offered in 1986-87).

235. Jurisprudence. A historical examination of the development of legal philosophy from ancient times to the contemporary period. 3 s.h. fall. *Christie*

507. Law and Literature (Seminar). An examination of lawyers' roles and legal problems in fiction and other literary forms. The seminar may also consider the significance of contemporary theories of literary criticism for legal analysis. A paper will be required. 2 s.h. (not offered 1986-87).

552. Law and Religion (Seminar). Interdisciplinary investigation of the impact of first amendment doctrine on religious organizations; the legal rights and moral obligations of clergy in questions involving the application of the testimonial privilege based on the priest-penitent relationship; state regulation of cult groups; attempts by religious groups to counter the secularization of law in areas such as abortion, sexual preference, and censorship; comparison of the concepts "punishment" and "sin." Readings will include case law, statutes, and writings by legal and religious commentators. Additionally, teams of students will study one topic in depth and make an oral presentation to the class. There is no final examination. 2 s.h. (not offered in 1986-87).

527. Medical-Legal-Ethical Issues (Interdisciplinary Seminar). A seminar composed of students and faculty from the Medical, Law, and Divinity Schools that will critically consider selected pertinent issues of mutual professional interest. 2 s.h. spring. *Gianturco (medicine), Shimm (law), and H. Smith (divinity)*

516. Political Philosophy and Law (Seminar). Primary attention will be given to contemporary jurisprudence in Europe as seen through the work of Habermas. An introduction to continental political and judicial theory will be provided. The relation of contemporary thought to earlier Marxism will be explored. The seminar will not meet until the week of September 16 and will meet twice weekly for the six weeks thereafter. A paper on an assigned topic will be the basis for the grade. There are no prerequisites. The seminar should be of special interest to students in the International Studies or Philosophy joint degree programs. Limited to 12 students. 2 s.h. (not offered in 1986-87).

594. Professionalism, Theory and Power in Legal and Literary Studies (Seminar). The method of this seminar will be to study cases in law side by side with cases in literary criticism and theory in order to demonstrate how alike the two disciplines

are in their procedures and in the problems they consider central to their enterprise. The similarity between the two disciplines extends to the range of problems they recognize and to the key terms in relation to which these problems are considered. The extensive debate concerning the possibility and desirability of recovering an author's intention in literary studies is matched in legal studies by a debate concerning the possibility and desirability of recovering judicial and legislative intent; and if literary critics argue as to whether or not interpretation depends on the reconstruction of historical circumstance, legal theorists dispute the nature and scope of precedent. It is also the case that the two disciplines display as many differences as they do similarities. If, as one legal theorist puts it, a judge must learn how to "read" in a way that avoids crises, literary critics (at least under a modern dispensation) must learn how to read in a way that multiplies crises. This means, in part, that the nature and exercise of authority will be quite different in the two disciplines, a difference that will be reflected in the channels by which authority is exercised and transmitted. 3 s.h. spring. *S. Fish*

556. Responsibility in Law and Morals (Seminar). Investigation of the relationship between responsibility in the law and moral blameworthiness; excuses and defenses; the roles of such concepts as act, intention, motive, ignorance, and causation. Texts: Holmes, *The Common Law*; Hart, *Punishment and Responsibility*; Morris, *Freedom and Responsibility*. 3 s.h. spring. *Golding*

316. Rights and the Environment (Seminar). The course will be a critical examination on how several philosophical and jurisprudential traditions address the issues of environmental quality and resource depletion. The traditions to be examined will include utilitarianism, Kantianism, the land ethic of Aldo Leopold, and the Aristotelian emphasis on virtue and character. A paper exploring specific issues within one or more such traditions will be required. 2 s.h. spring. *Schroeder*

648. U.S. Fourth Circuit History (Tutorial). Research for the bicentennial history of the United States courts of the Fourth Circuit from 1789 to the present. Individual research and group discussion on the development of judicial institutions and law in this southern circuit. 3 s.h. fall and 3 s.h. spring. *P. Fish*

INDEPENDENT RESEARCH

Law students in their second and third year of the J.D. or LL.B. programs may undertake up to four semester-hours of independent research in any academic year if the research is approved by a faculty member. Research will be graded on a credit/fail basis. Students undertaking independent research will meet regularly with the faculty member supervising the research in order to ensure contemporaneous discussion, review, and evaluation of the research experience.

AD HOC SEMINARS

A group of five or more students may plan and conduct their own research and seminar program for not more than two semester-hours of credit (which shall be considered to be independent research within the meaning of the maximum limitation of four semester-hours of independent research each year). A request to establish such an ad hoc seminar should be addressed to the Dean at least two months before the end of the semester preceding the semester in which the seminar is proposed and contain an outline of coverage and required readings. The Dean will request a member of the faculty to evaluate the program and determine whether the proposed program has academic merit. If approved by the Dean, a faculty member will be requested to evaluate the contribution of each participant before awarding credit. A written paper of the kind generally submitted in seminars will be required of each participant. Such seminar work shall be graded on a credit/fail basis.

COURSES IN OTHER DIVISIONS OF THE UNIVERSITY

Second- and third-year students other than joint degree candidates may take courses offered in other divisions of the University. Credit (limited to a total of six semester-hours) toward the J.D. degree will be granted for courses of suitable academic rigor in which the student earns a grade of *P* (or its equivalent) or better. A written request for permission to enroll in a University course outside the Law School must be presented to the Assistant Dean for Student Affairs. The actual grade earned in the course will be made a part of the student's permanent record, but will not enter into the Law School grade point average unless the student receives a failing grade.

Degree Programs



Juris Doctor Degree

Upon favorable recommendation of the faculty, the degree of Doctor of Law (J.D.) will be conferred upon students who have successfully completed six semesters of law study in residence at Duke. Two semesters of law study undertaken at another accredited American law school may be counted toward the required total if the final two semesters (exclusive of a summer session) and a minimum of fifty-five semester-hours of law study are undertaken at Duke.

Students shall be deemed successfully to have completed six semesters of law study if, during a minimum of ninety academic weeks, they have satisfied the following requirements:

1. a passing grade in courses aggregating eighty-six semester-hours and
2. a grade-point average of at least 1.80 on a 4.0 scale and status in good standing under the rules of the Law School.

Bachelor of Laws Degree

Upon favorable recommendation of the faculty, the degree of Bachelor of Laws (LL.B.) will be conferred upon students who have satisfied all of the requirements listed above as necessary for the Doctor of Law degree but who do not possess a baccalaureate degree prior to completion of the program of study for the Doctor of Law degree.

Joint Degrees

Combined Doctor of Medicine-Law Degree. The School of Law and the School of Medicine of Duke University jointly sponsor a program of combined legal and medical education. The program provides an opportunity to acquire a full basic study of the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the J.D. and M.D. degrees.

The student in the M.D.-J.D. program begins a six-year course of study in the School of Medicine. As in the regular M.D. program, the first year is devoted to the basic medical sciences and the second year to the basic clinical disciplines. At this point, the student usually enters the Law School, where the first-year curriculum is the same as that of other law students. During the next three or four semesters, the student may select courses in the Law School that are of special application to medical-legal interests. After completing law requirements, the student returns to the Medical School for elective clinical work tailored to the student's specialized needs. In addi-

tion, eighteen semester-hours, or two summer sessions, of elective basic science work are required.

Combined Master of Business Administration-Law Degree. The School of Law and the Graduate School of Business Administration of Duke University have established a combined program of studies in law and graduate level business administration. The aim of the program is to provide a small number of selected individuals with the opportunity to acquire an education in both law and business administration in a four-year course of closely integrated study in the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.B.A. and the J.D. degrees.

The student in the M.B.A.-J.D. program begins the first-year course of study in either the Graduate School of Business Administration or the School of Law. If the student begins in the Law School, the first-year curriculum is the same as that of other law students; if the student begins in the Graduate School of Business Administration, the first-year curriculum is the same as that of other graduate business students. The student's second year consists of the full first-year program of the other school. In the third and fourth years of the program, the student takes a mix of courses in both schools, but mainly in the Law School.

Combined Master of Health Administration-Law Degree. The School of Law and the Department of Health Administration have established a combined program of studies in law and health administration. The aim of the program is to provide interested persons with the opportunity to acquire an education in both law and health administration in an integrated four-year course of study in the two fields. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.H.A. and the J.D. degrees.

The student in the M.H.A.-J.D. program, after completing the first two semesters of the basic M.H.A. program, enters the Law School, where the first-year curriculum is the same as that of other law students. In the third and fourth years of the program, the student continues in the Law School, completing requirements for the law degree, including two electives approved by the Department of Health Administration, and takes ten more semester-hours of M.H.A. course work. In the Law School, the student is encouraged to emphasize courses relating to public law and administration. Opportunities for special activities in health law will be made available to the student by the Department of Health Administration over the course of the program.

Combined Master of Arts in Public Policy Sciences-Law Degree. The School of Law and the Institute of Policy Sciences of Duke University have established a combined program of studies in law and graduate level policy sciences. The aim of the program is to provide an opportunity for students to acquire decision-making skills and substantive policy knowledge that would be useful in either career or citizen roles dealing with problems of the public sector. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.A.P.P.S. and the J.D. degrees.

The combined program requires completion of seven or eight academic semesters and one summer internship. The first year is spent exclusively in the Law School pursuing the same course of study as do other first-year law students; the second year exclusively in the Institute of Policy Sciences; and the third and fourth years primarily in the Law School. In addition, the student must select a substantive policy area in which to concentrate from among the fields of the administration of justice, communications policy, health policy, and educational policy; a summer internship and thesis will be required in the chosen area. Since 1985, students also have the option of pursuing the M.A.P.P.S. through participation in the summer-entering program described in the next paragraph.



Combined Master of Arts-Law Degree The School of Law and the Graduate School of Duke University jointly sponsor a program of study in law and several alternative disciplines, including economics, history, philosophy, political science, and an interdisciplinary program in the humanities. The purpose of the program is to encourage the broader intellectual interests of law students and to foster dialogue between law and related disciplines. It is intended in part as an antidote for narrowing careerism that sometimes overtakes professional education. Upon satisfactory completion of the required course of study, candidates will be awarded both the M.A. and J.D. degrees.

Students enter the program in the summer prior to the first year of Law School, undertaking a portion of the first-year law curriculum. Throughout their remaining six semesters in residence, students will combine their legal studies with courses selected from the Graduate School curriculum, taking two Graduate School courses per semester during the first year and four more Graduate School courses in the final four semesters.

Master of Legal Studies

Upon favorable recommendation of the faculty, the degree of Master of Legal Studies (M.L.S.) will be conferred upon students who have successfully completed a one-year program of study in the Law School. Students specially admitted to candidacy for this degree will pursue an individually designed curriculum including both first-year and upperclass courses. The degree may also be awarded to J.D. candidates who meet its requirements and who decide to abandon the study of law.

Students will be deemed successfully to have completed a one-year program of study in the Law School if, during a minimum of thirty academic weeks, they have satisfied the following requirements:

1. a passing grade in Law School courses aggregating thirty-one semester hours, excluding cross-listed courses, and including at least one course requiring substantial supervised writing, and
2. a grade-point average of at least 2.0 on a 4.0 scale and status in good standing under the rules of the Law School.

Graduate Study in Law

The Law School program is primarily designed to serve students seeking a first professional degree in American law. Except for international students and participants in the J.D./L.L.M. program described below, students are rarely admitted for the purpose of continuing the study of law at the master's or doctoral levels, although the faculty is empowered to authorize such admissions. Applications for such study by American graduates of American law schools are not sought. International students should consult the chapter of this bulletin addressed to them.

Combined Juris Doctor-Master of Laws Degree. Since 1985, the Law School has offered the opportunity to selected J.D. candidates to pursue a Master of Laws degree emphasizing international and comparative law study. Students accepted to the program will enter in the summer, undertaking a portion of the regular first-year curriculum with students who are pursuing the joint J.D./M.A. program described above. During the remaining six semesters of law study, J.D./LL.M. students will complete requirements for both degrees. The courses selected for application toward the LL.M. will include not only the study of foreign legal systems, but also the social, economic, and political environment in which one particular foreign legal system functions. Drawing on the area studies programs at Duke for enrichment, the LL.M. program for American students will particularly emphasize study of the laws of Canada, China, Germany, and Japan. Opportunities for brief periods of study in those countries may be developed as part of this program.

Candidates for the LL.M. degree will be required to complete twenty credit hours of approved courses, including a significant written product, with a minimum grade point average of 2.2. Students must also demonstrate competency in at least one foreign language prior to the award of the LL.M. degree. Six of the twenty hours required for the LL.M. may be taken in the Graduate School or in upper level undergraduate course work, including advanced language study; six additional nonlaw hours are permitted to be applied toward the J.D. degree.

Beyond the Curriculum



Publications

Law and Contemporary Problems. Since 1933, the Law School has published the quarterly, *Law and Contemporary Problems*. The journal is distinctive among professional legal publications in both its format and its content. Each issue is devoted to papers from a symposium on a particular topic of contemporary interest. These topics reflect an interdisciplinary perspective with contributions by lawyers, economists, social scientists, scholars in other disciplines, and public officials.

The journal is widely distributed, and its subscribers include general university libraries, governmental agencies, and foreign educational institutions, as well as the more traditional law libraries and law firms.

About twenty-four upperclass law students serve on the staff of this publication. They are responsible for the editorial work, and contribute their own writing to the symposia. Ten second-year students are selected each year on the basis of their first-year grades and the evaluations of their first-year tutorial instructors. About five new third-year students are elected on the basis of grades as well as a writing program.

Duke Law Journal. The Law School publishes the *Duke Law Journal* six times a year. Edited by students, the *Journal* is among the most prestigious and influential legal publications in the country. Approximately one-third of the contents of each issue consists of student notes dealing with current legal developments; the balance is devoted to articles and comments by professors and practitioners. Full responsibility for the selection and editing of material is vested in the *Journal's* student editorial board and its elected officers.

Membership on the *Journal* is achieved in one of two ways. Several students are selected on the basis of outstanding performance during their first year of law school. Additionally, second-year students (including those transferring to Duke from other schools) may participate in a writing program; participants demonstrating exceptional writing ability are invited to become members of the *Journal*.

Each year one *Journal* issue is devoted to topics in administrative law. Subjects of recent articles and notes reflect both the variety and depth of current legal thought; developing a theory of "just cause" in employee cases, an assessment of the market participant test in dormant commerce clause analysis, nonarrest investigatory detentions in search and seizure law, and tying arrangements in the computer industry.

Alaska Law Review. Since 1983-84, Duke Law School has published the *Alaska Law Review*. Alaska has the highest number of lawyers per capita of any American state, and a range of cutting edge legal issues in the areas of natural resources law, environmental law, land use planning, economic development, state-federal rela-

tions, and Native American rights. Since Alaska has no law school, Duke agreed with the Alaska Bar Association to provide a professional journal of law which would be responsive to the needs of Alaska's diverse legal community.

The *Alaska Law Review* is supervised by a board consisting of members of the Duke Law faculty and representatives of the Alaska Bar Association, but the student editors have primary responsibility for writing, editing, and managing the review. Twelve students are chosen for the review out of each rising second-year class on the basis of first-year grades and the recommendations of the first-year tutorial writing instructors.

Student notes form the bulk of the material in the review, which is published semiannually. The articles and student notes focus on topics of interest to the practicing attorney in Alaska.

Duke Law Magazine. The Law School publishes a semiannual review of the intellectual life of the school entitled *Duke Law Magazine*. Student-authored work is sometimes included, along with faculty essays and reports of events of academic significance to the school.

Honorary, Professional, and Social Organizations

Order of the Coif. The Order of the Coif is a national legal scholarship society with a local chapter at Duke University School of Law. Its purposes are "to foster a spirit of careful study and to mark in a fitting manner those who have attained a high grade of scholarship." Election is restricted to students standing scholastically in the highest 10 percent of the graduating class.

The Duke Bar Association. The Duke Bar Association coordinates the professional, social, and other extracurricular activities of the student body. The association resembles in its composition and purpose both a university student government and a professional bar association. It takes care of student grievances and serves as a mediator between students, faculty, and the administration. The association oversees all student organizations, publicizes Law School activities, sponsors athletic and social programs, and disperses its dues fund among the school's organizations.

Legal Research Program. The Legal Research Program, supervised by a student editorial board, provides second- and third-year students with an opportunity to prepare legal memoranda on actual problems submitted by practicing lawyers, judges, or legislative committees.

Moot Court Board. The Moot Court Board is composed of second- and third-year students who are chosen on the basis of their performances in intramural moot court competition. The board supervises the Hardt Cup and the Dean's Cup Competitions. In addition, the board provides personnel for teams entering intercollegiate competition.

Duke Law Forum. The Duke Law Forum, through films, seminars, and speakers, traditionally seeks to stimulate and educate debate on national and legal issues. The forum has also sought to provide intellectual respite from the law by sponsoring lectures in various topics in literature, history, and philosophy.

International Law Society. Membership in the Duke International Law Society is open to the entire law student body. The society sponsors an annual distinguished speaker series with lecture topics ranging from the law of warfare to peace negotiations, from the law of the seas to space law. The scope is limited only by the interests of the society members and the student body at large. The society is currently exploring joint programs with local law schools, overseas study alternatives, and contributorships to international law journals throughout the country. Other activities include participation in the annual Philip C. Jessup International Moot Court Competition

and attendance at conferences sponsored by the Association of Student International Law Societies.

Women's Law Society. Women's Law Society provides a central organization through which women law students can meet to form friendships and to share problems unique to women in the legal profession. The group works as a clearinghouse for information in areas of particular concern to women through bulletin board notices and informal presentations at faculty student receptions. The group also communicates with women's groups in other law schools in North Carolina, maintains memberships in several state and national organizations, and teaches an undergraduate course on women and the law.

Current and prospective women law students are encouraged to contact members of the Women's Law Society for information about the organization, Duke Law School, or the legal profession.

Deans' Advisory Council. Members of the Deans' Advisory Council are selected by the several deans of the Law School. Selection for membership reflects the collective judgment of the deans that the student is unusually deserving of trust and respect, and manifests traits for which the school would like to be known. The work of the council is to assist the administration of the Law School in its public contacts. Members represent the school in dealing with admissions applicants, placement interviewers, alumni, supporters, and guests. Membership in the organization generally continues after graduation; alumni members continue to assist in the same areas of administrative work. Membership involves a substantial commitment of time and energy to the welfare of the school.

Black Law Students Association. The Law School chapter of BLSA is affiliated with the regional and the national BLSA. The aims of the local chapter are to provide a responsive student organization to aid the individual black law student at Duke and to instill a greater awareness of and commitment to the needs of the black community.

American Bar Association's Law Student Division. The ABA/LSD, active in virtually every law school in the country, is the way for law students to make contact with the nation's largest professional association for lawyers, the American Bar Association. A member of the Fourth Circuit, along with the law schools of Virginia, West Virginia, and North and South Carolina, Duke has played a strong leadership role in the circuit as well as at the national level of the division. A small enrollment fee entitles the Law Student Division member to a subscription to the ABA magazine *Student Lawyer*, to inexpensive ABA-sponsored health insurance, and to information about the ABA's programs and publications on specialized areas of the law. The ABA/LSD also promotes various advocacy and essay contests throughout the school year.

Forum for Legal Alternatives. The FLA is made up of students from all three classes who are interested in information about less traditional legal careers. In the past few years the FLA has brought lawyers to the Law School to speak on legal services, environmental law, union labor law, child advocacy, government work, and setting up a solo practice after law school. The group works with the Placement Office to provide information on employment opportunities in the public interest fields and maintains contacts with the North Carolina chapter of the National Lawyers' Guild and other public interest and civil rights groups in the area. As a respite from its serious work, the FLA has a potluck dinner each semester.

Student Funded Fellowship. The SFF provides living-expense stipends to several students each year who work in nontraditional or public interest legal jobs. Law students and members of the faculty and administration contribute to the SFF. The fund is then allocated to recipients by the fellowship's Board of Directors.

Voluntary Income Tax Assistance. For many years law student volunteers have provided tax preparation assistance to low-income people in the community. Two or more sites in Durham are staffed by the law school for eight weeks prior to the tax filing deadline.

Prisoners' Rights Project. The PRP provides a range of services to inmates of the North Carolina Department of Corrections including: research on inmate questions and grievances, intake interviews, assistance in habeas corpus motions and other suits, and work with mothers in prison. The PRP also arranges a tour of Central Prison, North Carolina's maximum security facility, so that students can get a first-hand view of one aspect of the criminal justice system in the state.

National Lawyers' Guild, Student Chapter. The National Lawyers' Guild is an organization of lawyers, legal workers, law students, and jailhouse workers with over 7,000 members in the 97 chapters throughout the United States. The guild was founded in 1937 as a multi-racial and progressive alternative to the American Bar Association.

Duke's student chapter aims to educate its members and the community of Duke University about the most significant battles for political, economic, and social change. The group opposes all forms of racial and sexual discrimination. The guild plans to hold forums and workshops on a wide range of issues, including U.S. militarism in Central America, U.S. support for South Africa's apartheid regime, the Ku Klux Klan, gay rights, legal services for the poor and elderly, the death penalty, and other topics. The guild will also seek to promote debate about alternative methods and theories of legal education. Finally, the chapter will be flexible and open to suggestions from its members for new projects.

The guild will have access to the programs of the national organization as well. The guild's numerous task forces and committees produce books, pamphlets, and litigations skills manuals on all areas of its work.

Legal Fraternities. The two legal fraternities are Hughes Inn of Phi Delta Phi and Wiley Rutledge Chapter of Phi Alpha Delta. These organizations sponsor luncheons, meetings featuring topics of professional interest, and several other social activities.

Entertainment and Recreation

Various recreational facilities are available on campus to students. The recently completed Bryan Center contains the Reynolds Theater and the Schaefer Laboratory Theater, as well as a film theater, an art gallery, banquet rooms which are available to students at minimal cost, and lounges and patios for student meetings.

Students of the Law School are also entitled to use the University gymnasiums, tennis courts, swimming pools, golf course, and other facilities. Within a short distance from the campus one may enjoy horseback riding, woodland hiking, and sailing. Other opportunities for physical activity are available in the intramural program, as well as through such activity groups as the outing, sailing, and cycling clubs. North Carolina's mild climate makes most outdoor sports possible during much of the school year. The Appalachian ski slopes are about three and a half hours to the west, the Outer Banks the same distance to the east.

University athletic contests are held on the campus at various times during the academic year. Duke is a member of the Atlantic Coast Conference.

Employment Opportunities

The study of law is demanding. It is designed to occupy the full time of the student and calls for the highest level of concentration. It is unwise for students to dilute their efforts by outside work, especially during the critical first year of study.

For those who find some outside earnings necessary to meet the expense of studying law at Duke and who qualify for the college work/study program under

applicable federal regulations, arrangements have been made to provide some part-time employment in the Law School. A number of positions in the law library are filled by law students. Students are often employed in their second and third years as research assistants for faculty members. The University maintains a general placement office to aid in finding employment, and law students may serve as undergraduate residence advisers if they have been at Duke one year or have previously held such positions.

Law student spouses who seek employment will find opportunities as good here as in most other areas of the country. Laboratory and technical workers, secretaries, computer programmers, technicians, and medical personnel are among the workers most in demand in this area. Spouses who are teachers will find the names of the superintendents of schools in nearby districts listed in the *Duke Law School Handbook* (see below). The University personnel office and the Medical Center personnel office assist interested persons on locating suitable employment on campus.

The Duke Law School Handbook

Incoming students are supplied with a handbook containing useful information which is compiled and updated each year by the DBA. Topics covered include housing, transportation, living needs and expenses, Law School facilities, student health facts including information on the University's Counseling and Psychological Services, and data for married students such as educational and employment opportunities. Also included in the handbook is information on facilities for the handicapped, for whom the school makes special provision as required above and beyond its already considerable accessibility.

Law Library



The written law in its variety of forms is the basic working material of the practicing attorney and the legal scholar. At Duke, law students utilize the resources of the library collection and the skills of the highly trained library staff in the development of research skills that will serve them throughout their professional careers.

The Duke Law Library is more than a repository of books. Recognizing its place at the center of the Law School community, the library offers accessible, well-organized collections and services. Both group and individual study areas are arranged in proximity to the most-used materials. The entire collection of over 350,000 volumes is a major research collection designed for the educational needs of law students. It features comprehensive coverage of basic Anglo-American primary source materials, including nearly all reported decisions of federal and state courts, as well as current and retrospective collections of federal and state codes and session laws. Digests, legal encyclopedias, and other indexing devices provide access to the primary documents. Materials subject to heavy student use are available in multiple copies. Comprehensive collections of records and briefs from the United States Supreme Court, the Fourth Circuit Court of Appeals, the New York Court of Appeals, and the North Carolina Supreme Court and Court of Appeals are maintained in microform and hard copy. The library maintains an extensive, and continuously expanding, collection of legal treatises. These are organized in the familiar Library of Congress classification system and are accessible through a public catalog, generated by a computer-based card-production system. Special treatise collections are maintained in several subject areas, including the George C. Christie collection in jurisprudence and the Floyd S. Riddick collection of autographed senatorial material.

The periodical collection includes extensive runs of all major legal research journals, bar association publications, institute proceedings, and newsletters. The library is a selective depository for United States government publications, with concentration on congressional and administrative law materials. Hard copy document holdings are supplemented by an extensive microform collection, which includes complete runs of the *Congressional Record* and the *Federal Register*, all post-1970 congressional materials, congressional committee prints dating back to the mid-nineteenth century, and a number of special subject collections. In addition, law students have access to the extensive documents collection of the main campus library. Important state government documents are collected in both hard copy and microform.

In addition to its Anglo-American holdings, the library holds substantial research collections in foreign and international law. The foreign law collection is extensive in coverage, with concentrations in Canadian, other commonwealth, and European law and business law materials. The international law collection is strong in primary source and treatise material on both private and public international law topics.



But the success of a law school library depends as much on the quality of the services it provides as on the strengths of its collection. At Duke, the library staff includes eight librarians with graduate degrees, four of whom hold additional degrees in law. The staff takes its role in the legal education process seriously. The law-trained staff members serve as instructors for the legal bibliography segments of the first-year research and writing program and regularly offer seminars in topics of advanced legal research. The staff now provides access to a variety of computerized information sources. The two major legal databases, LEXIS and WESTLAW, are used for research and training purposes. In addition, an increasing number of full-text and bibliographic databases and comprehensive indexing services are available through NEXIS, BRS, and DIALOG, as well as the CCH Electronic Legislative Search System. The staff produces a series of research guides, a newsletter, and various current-awareness services. It also maintains bibliographies of books and articles by Law School faculty members. In 1984, these library publications were honored with the American Association of Law Libraries' Law Library Publications Award. Presently, AALL's quarterly journal, *Law Library Journal*, is edited at Duke.

The library is part of the Law School and is administered independently of the main library system at Duke. The Duke University Libraries (Perkins, Law, Business, and Medical) contain one of the major research collections in the country, holding well over 3,000,000 volumes.

To obtain materials not available locally, the law library staff makes use of a computerized interlibrary loan network, which allows retrieval of information from libraries throughout the country. Cooperation with other libraries, both on and off campus, ensures that materials are available when needed for the Law School community.

The staff of the Law Library in 1986-87 includes the following professionals:

Richard A. Danner, B.A., M.S., J.D., *Director of the Law Library and Professor of Legal Research*

Hope E. Breeze, B.A., M.L.S., *Head of Technical Services*

Michael G. Chiorazzi, B.A., M.L.L., J.D., *Reference Librarian and Senior Instructor in Legal Research*

Janeen J. Denson, A.B., M.S.L.S., *Circulation Librarian*

Claire M. Germain, B.A., LL.B., M.C.L., M.L.L., *Assistant Librarian for Information Services and Senior Lecturer in Comparative Law and Legal Research*

Doris M. Hinson, B.A., M.L.S., *Cataloger*

Janet Sinder, A.B., J.D., M.S., *Reference Librarian and Instructor in Legal Research*

Gretchen P. Wolf, B.S., M.S., *Acquisitions Librarian*

International Students



International Law Study at Duke

Each year the Law School welcomes applications from highly qualified foreign students who seek exposure to the American legal system and profession. Overseas applicants should recognize that enormous difficulty inheres in the study of a foreign legal system. No other academic discipline is so inculturated and makes such enormous demands on the intellectual adaptability of the student. Foreign students at Duke must, of necessity, enter into the regular program designed for very able professional students who are presumed to possess a substantial background in their own American culture. Moreover, law study makes substantial demands on the language skills of even those who are native users of English; if a language problem is added to the other inherent difficulties of foreign law study, the disadvantage to the foreign student is further increased.

The Law School does make a special effort to help foreign students with their adjustment. The Assistant Dean for International Studies serves as Admissions Officer for foreign students and is also available to assist with housing, immigration, and adjustment problems. The Duke University International House sponsors a week-long orientation for all foreign students new to Duke, and students are encouraged to participate in the Law School orientation for entering J.D. students. Students will receive academic counseling as well as instruction in American techniques of legal research and writing.

Degree Programs for International Students

International students may apply to the following degree programs:

Juris Doctor (J.D.). Foreign students may be admitted for the J.D. degree. This program should only be attempted by students who find themselves ready to handle the difficulties of an American legal education. Such candidates must present satisfactory scores on both the Law School Admission Test (LSAT) administered to American applicants and the Test of English as a Foreign Language (TOEFL). Candidates who have earned professional law degrees in systems not dissimilar to the American system may occasionally receive credit for as much as one-third of the course work ordinarily required for the completion of the J.D. program. All inquiries about the J.D. program should be directed to the Law School Office of Admissions.

Master of Laws (LL.M.). Most international students seek the master's degree, having already been trained in the law of their own countries. To qualify for this degree, the student must successfully complete two semesters of study in residence,

and must complete no fewer than twenty semester-hours. Included in the twenty credits of work must be at least two credits of individual written work completed either in a seminar or in an independent study course supervised by a faculty member. Students are also required to take a first-year course, which will bring them into close contact with a small group of American students who are facing similar academic challenges. Most foreign students will be expected to enroll in the two-credit course, American Law for International Students.

The remainder of the academic program is individually selected by the student from the curriculum offerings for first-year and upperclass students. International students will attend classes with American students and will participate in the same grading procedures. All international students will receive the guidance of an academic adviser who is a faculty member at the Law School. The degree will be granted to students who achieve a grade point average of 2.2 on a 4.0 scale by the end of the academic year. Candidates are expected to complete the LL.M. degree in one year except in exceptional circumstances.

Doctor of Juridical Science (S.J.D.). Foreign students who have already earned a degree in American law at the master's level may apply for admission to the S.J.D. degree. Only students who have achieved excellent academic records throughout their law study and, in particular, during the master's degree program should seek admission. It is expected that S.J.D. candidates will be able to conduct original research and will produce a thesis that makes a contribution to legal scholarship.

Applicants to the S.J.D. program should submit all materials promptly. In order to evaluate the application, it is necessary for Duke Law School to have a proposal for the doctoral thesis and at least one sample of written work, such as a completed seminar paper. References from professors who have taught applicants at the master's level should also be provided. A transcript of all courses completed at the master's level must be received before consideration can be given to an application. At the discretion of the Committee on International and Comparative Studies, candidates may be asked to complete one or more semesters of course work before beginning the doctoral thesis. The program will take from two to three years to complete, depending on the time required to write the doctoral thesis. It should be noted that very few applicants gain admission to the S.J.D. program.



Admission of International Students

A separate admission process is maintained for foreign students applying to the LL.M. or S.J.D. programs. Prospective applicants should write for forms and information to Judith Horowitz, Assistant Dean for International Studies. An application fee of \$45 is charged and should accompany the application. Students from countries where English is not the principal language are required to present a satisfactory score on the Test of English as a Foreign Language (TOEFL), which is administered by the Educational Testing Service of Princeton, New Jersey. For further information, appropriate officials at the student's university should be consulted.

Applications and supporting material should reach Duke by February 15. Students who sit for the TOEFL later than January should be advised that it often takes up to two months for examination results to reach Duke. Late TOEFL scores may seriously delay or even jeopardize admissions decisions. Admission is for the fall semester only.

Financial Aid

Duke can offer very little financial assistance to foreign students. Foreign applicants will be required to supply assurance of their ability to pay their tuition and living expenses. A deposit fee of \$400 will be required to confirm acceptance of a position at the Law School.

Placement with American Law Firms

The Duke program for international students is directed primarily to those who will return to their home countries upon receipt of their degrees. Some students have found, however, that their exposure to the American legal system is enriched by a short internship with an American law firm before returning home. The placement office offers assistance to international students and maintains a list of American law firms that have expressed an interest in interviewing foreign students, and it will assist in scheduling interviews. The Law School and the Duke visa office will help students to obtain permission for practical training. It cannot, of course, guarantee students that they will have success in locating a position with an American law firm.

Placement



Placement Services

Placement of law students and graduates is the concern of an active placement office. Its staff includes the Director of Placement, two staff members, and occasional student aides. The activities of the placement office can be broken down into several categories: coordination of an extensive on-campus recruiting season; custodial responsibility for a wealth of materials on legal careers, available positions, bar memberships, and other related matters; and assisting students and recent graduates throughout the year in the job placement process.

The advantages of attending a school the size of Duke extend into the placement process. The placement office staff is happy to help students in their job hunt and because of the student body size, student questions can be dealt with on an individual basis. Services provided by the placement office include individual assistance in resumés and cover letter writing; personal counseling on career choices, job opportunities, and strategies; workshops and seminars on everything from values clarification to firms in "off-Broadway" cities; and information regarding the on-campus interviewing process. Because of Duke's national prominence, a large number of employers visit the campus each fall to interview second- and third-year students. Over 400 employers from all over the country interview about 375 students. In addition, almost 1,000 employers a year write to request student resumés. With the wide variety of employment possibilities available, a substantial number of students in each of these classes receive offers of employment.

Because of the diverse background of the student body, there is a good geographical distribution of employers who express interest in Duke Law School students. Generally speaking, about two-thirds of the students will find employment in a broad "eastern corridor" that stretches from Boston to Miami. The remaining third of the students find jobs in most of the remaining mid-western and western states. About one in ten students begin their professional careers as judicial clerks, including several who serve on the staffs of federal appellate judges. A large number of students accept employment with private law firms, but there is a steady core of students whose interests range among public service organizations, governmental agencies, business corporations, and other areas. Beginning salaries exceed \$45,000 in the largest cities, but the median for first jobs is substantially lower. By graduation of each year approximately 85 percent of both the second- and third-year classes have found employment. Since jobs continue to be available after that time, the hiring rate continues to improve over the summer. The placement office makes every effort to assist students in finding the kind of legal employment they seek.



First-year students most actively seek employment during the spring semester. There is a small on-campus interviewing program between January and March. In addition, listings of employers who seek first-year clerks are available throughout the semester. The placement office also collects lists of legal internships and law-related summer volunteer opportunities that may be of interest to first-year students. The placement office encourages students to explore the variety of professional opportunities available to them and seeks to instruct them in effective job-hunting as well. It should be noted, however, that the students themselves are primarily responsible for finding their own employment. They must be willing to devote a large amount of their time to letter-writing and to interviewing. The Law School diligently attempts to assist its graduates, but the ultimate responsibility rests with each student.

Bar Examinations and Requirements

Many states now require that students, prior to or shortly after beginning the study of law, register with the Board of Bar Examiners of the state in which they plan to practice. Prior to selecting the law school they will attend, at matriculation, and at the beginning of each subsequent year of law school, applicants are advised to consult the rules of all states in which they may be interested in practicing after graduation to determine the curriculum and other requirements of state bar examining authorities.

Appendix A

Former Schools of Duke Law Students

Albion College	2	Kent State University	1
Alfred University	1	Lafayette College	3
American University	1	La Salle University	1
Amherst College	3	Lehigh University	2
Antioch College	1	Lewis and Clark College	1
Asbury College	1	Limestone College	1
Auburn College	1	Louisiana State University	1
Augustana College	1	Loyola University	6
Barnard College	2	Macalester College	1
Birmingham-Southern College	1	MacMurray College	1
Bob Jones University	2	Manhattanville College	1
Boise State University	1	Marietta College	1
Boston College	8	Michigan State University	3
Boston University	5	Middlebury College	2
Brandeis University	7	Millsaps College	1
Brigham Young University	2	Mount Holyoke College	3
Brown University	3	Muhlenberg College	1
Bryn Mawr College	4	New York University	2
Canisius College	1	Northwestern University	7
Carleton College	1	Oberlin College	4
Carnegie-Mellon University	1	Occidental College	3
Centre College of Kentucky	1	Ohio State University	3
Clemson University	1	Ohio Wesleyan University	1
Colgate University	8	Pacific Lutheran	1
College of Holy Cross	1	Pennsylvania State University	6
College of William and Mary	1	Pitzer College	1
Colorado College	1	Pratt Institute	1
Colorado State University	1	Princeton University	13
Columbia College	1	Queens College	1
Columbia University	14	Rice University	1
Cornell University	6	Rollins College	2
Creighton University	1	Smith College	2
Dartmouth College	8	Southern Connecticut University	1
David Lipscomb College	1	Southern Methodist University	2
Davidson College	8	Southwestern at Memphis	1
Denison University	1	Spelman College	1
DePaul University	1	Spring Hill College	1
DePauw University	1	Stanford University	4
Dickinson College	1	St. Elizabeth's College	1
Duke University	51	St. John's University	1
Emory University	4	St. Lawrence University	1
Fairfield University	2	St. Louis University	1
Florida State University	7	St. Norbert College	1
Fordham University	2	Stetson University	3
Franklin and Marshall College	1	State University of New York at Albany	2
Furman University	2	State University of New York at Binghamton	10
Georgetown University	4	State University of New York at Buffalo	3
George Washington University	3	State University of New York at Genesco	1
Georgia Institute of Technology	1	State University of New York at New Paltz	1
Gonzaga University	1	Texas A & M University	1
Hamilton College	2	Texas Tech University	1
Hamline College	1	Transylvania University	1
Harvard University	10	Trinity College	3
Haverford College	4	Tufts University	8
Hofstra University	1	Tulane University	3
Huntingdon College	1	Union College	2
Indiana University	3	United States Air Force Academy	2
Iowa Wesleyan College	1	United States Military Academy	1
Ithaca College	1	United States Naval Academy	1
Johns Hopkins University	7	University of Alabama	3
Juniata College	1	University of Arkansas	2

University of Arizona	1	University of Rochester	3
University of California at Irvine	1	University of the South	1
University of California at Los Angeles	3	University of South Carolina	3
University of California at Santa Cruz	1	University of Southern California	1
University of Chicago	2	University of Southern Florida	2
University of Delaware	1	University of Tennessee	1
University of Central Florida	1	University of Texas	4
University of Florida	8	University of Vermont	1
University of Georgia	1	University of Virginia	7
University of Illinois	7	University of Washington	3
University of Kansas	1	University of Wisconsin	3
University of Kentucky	4	Utah State University	1
University of Maine	1	Valparaiso University	1
University of Maryland	5	Vanderbilt University	4
University of Miami	3	Vassar College	1
University of Michigan	11	Villanova University	1
University of Minnesota	1	Wabash College	2
University of Mississippi	1	Wake Forest University	2
University of Missouri	6	Washington and Jefferson College	2
University of New Hampshire	1	Washington University	1
University of North Carolina at Chapel Hill	14	Wellesley College	2
University of North Carolina at Greensboro	1	Wesleyan University	1
University of Notre Dame	18	Westfield State College	1
University of Oklahoma	1	West Virginia University	2
University of Pennsylvania	17	Wheaton College	3
University of Rhode Island	1	Williams College	3
University of Richmond	1	Yale University	13



Appendix B

Foreign Universities

Athens University	1	Peking University	1
Beijing Institute of Foreign Trade	2	Queen's University	1
Beijing Normal University	1	Seoul National University	4
Central Police College	1	Tel Aviv University	1
China University of Foreign Studies	1	Universidad Catolica	1
College Calvin	1	University of Basel	1
Fudan University	2	University of Berne	1
Goethe University	1	University of Brussels	1
Kyoto University	1	University of Exeter	1
Liege University	1	University of Ghana	1
Luitpold Gymnasium Munchen	1	University of London	1
McGill University	2	University of Louvain	1
National Chung-Hsing University	1	University of Santa Maria La Antigua	1
National Taiwan University	1	University of Tokyo	2
Peking Second Foreign Language Institute	1	Warsaw University	1

Home States of Duke Law Students

Alabama	10	Missouri	12
Alaska	1	Nebraska	2
Arkansas	4	New Hampshire	1
California	10	New Jersey	36
Colorado	6	New York	85
Connecticut	21	North Carolina	36
Delaware	2	North Dakota	1
District of Columbia	7	Ohio	20
Florida	43	Oklahoma	1
Georgia	17	Oregon	2
Hawaii	1	Pennsylvania	25
Idaho	1	Rhode Island	5
Illinois	24	South Carolina	12
Indiana	6	South Dakota	2
Iowa	1	Tennessee	8
Kansas	4	Texas	7
Kentucky	12	Utah	1
Louisiana	7	Vermont	1
Maryland	26	Virginia	13
Massachusetts	13	Washington	4
Michigan	11	West Virginia	2
Minnesota	4	Wisconsin	6
Mississippi	2	Wyoming	2

Foreign Countries

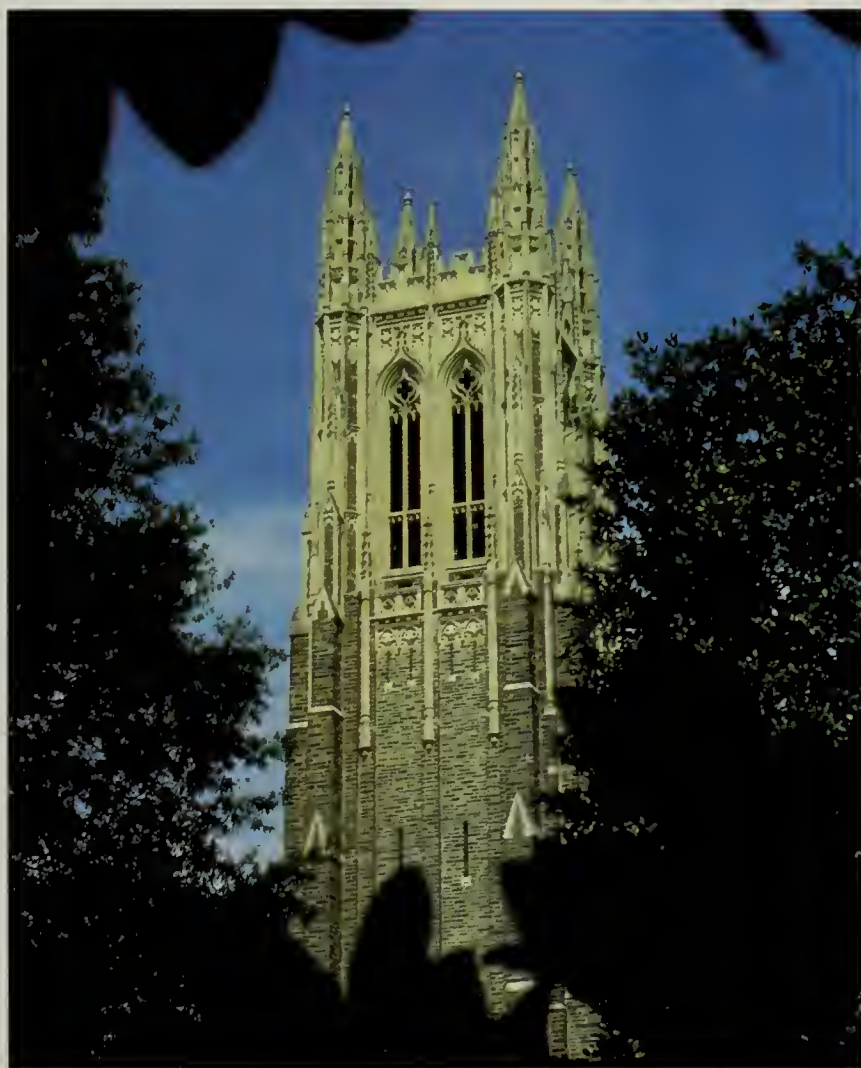
Austria	1	Japan	3
Australia	1	Korea	4
Belgium	2	New Guinea	1
Canada	5	Panama	1
China (PRC)	9	Poland	2
England	1	Scotland	1
Germany, West	2	Switzerland	4
Greece	1	Taiwan (ROC)	3
India	1	Venezuela	1
Israel	1		

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bulletin of
Duke University
1986-87

The Divinity School



bulletin of
Duke University
1986-87

The Divinity School

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The information in the bulletin applies to the academic year 1986-87 and is accurate and current, to the best of our knowledge, as of February, 1986. The University reserves the right to change programs of study, academic requirements, lecturers, teaching staffs, the announced University calendar, and other matters described in the bulletin without prior notice, in accordance with established procedures.

Duke University does not discriminate on the basis of race, color, national and ethnic origin, sex, handicap, or age in the administration of educational policies, admission policies, financial aid, employment, or any other University program or activity. It admits qualified students to all the rights, privileges, programs, and activities generally accorded or made available to students. For further information, call Dolores L. Burke, Equal Opportunity Officer, (919) 684-8111.

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Calendar of the Divinity School

Fall, 1986

August	
27	Wednesday—Orientation for new students begins
28	Thursday—Orientation continues
29	Friday, 9:00-10:30 A.M.—Registration for returning students; 10:30-12:00 noon—Registration for new students
September	
1	Monday, 8:00 A.M.—Fall semester classes begin
1	Monday—Drop/add period begins
2	Tuesday, 10:00 A.M.—Divinity School opening convocation —Duke University Chapel
12	Friday, 12:00 noon—Drop/add period ends
October	
17	Friday, 6:00 P.M.—Fall recess begins
22	Wednesday, 8:00 A.M.—Classes resume
29-30	Wednesday-Thursday—Registration for spring semester
November	
3-5	Monday-Wednesday—Divinity School Convocation and Pastors' School, Gray Lectures and Hickman Lectures
26	Friday, 12:00 noon—Thanksgiving recess begins
December	
1	Monday, 8:00 A.M.—Classes resume
12	Friday—Fall semester classes end
16	Tuesday—Final examinations begin
19	Friday—Final examinations end

Spring, 1987

January	
8	Thursday—Orientation for new students
9	Friday—Registration for new students; registration changes for returning students
12	Monday—Spring semester classes begin
12	Monday—Drop/add period begins
23	Friday, 12:00 noon—Drop/add period ends
March	
6	Friday, 6:00 P.M.—Spring recess begins
16	Monday, 8:00 A.M.—Classes resume
25-26	Wednesday-Thursday—Registration for fall semester
April	
22	Wednesday, 10:00 A.M.—Divinity School closing convocation —Duke University Chapel
24	Friday—Spring semester classes end
28	Final examinations begin
May	
1	Friday—Final examinations end
9	Saturday, 6:30 P.M.—Divinity School baccalaureate service
10	Sunday, 3:00 P.M.—Commencement exercises

University Administration

GENERAL ADMINISTRATION

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Phillip A. Griffiths, Ph.D., *Provost*
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William L. Green, Jr., A.B., *Vice-President for University Relations*
Joel L. Fleishman, LL.M., *Vice-President*
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Charles E. Putman, M.D., *Vice-Chancellor for Health Affairs*
Charles T. Clotfelter, Ph.D., *Vice-Chancellor of the University*
Patricia C. Skarulis, M.A., *Vice-Chancellor for Information Systems*
R. James Henderson, M.Ed., *Associate Vice-President and Business Manager*

Divinity School Administration

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Russell E. Richey (1986), B.D., Ph.D., *Associate Dean for Academic Programs*
B. Maurice Ritchie (1973), B.D., *Associate Dean for Student Life and Field Education*
Paula E. Gilbert (1980), M.Div., Ph.D., *Assistant Dean for Admissions and Student Life*
Wesley F. Brown (1981), M.Div., *Director of Development and Alumni Affairs*
W. Joseph Mann (1984), M.Div., S.T.M., *Director of Continuing Education*
Grant S. Shockley (1983), M.Div., Ed.D., *Director of Black Church Affairs*
Kelli Walker-Jones (1985), M.Div., *Associate Director of Admissions and Field Education*
Christopher Walters-Bugbee (1983), B.A., *Director of Communications*
Clara S. Godwin (1969), *Administrative Assistant for General Administration and Finance*
Wilson O. Weldon (1981), B.D., D.D., *Special Assistant to the Dean*

Division of Special Programs

Peter G. Keese (1973), S.T.B., Th.M., *Director of Clinical Pastoral Education*
Robert L. Wilson (1970), B.D., Ph.D., *Director, J. M. Ormond Center for Research, Planning, and Development*

Division of Advanced Studies

Stanley Hauerwas, Ph.D., *Director of Graduate Studies in Religion*

Library

Donn Michael Farris (1950), M.Div., M.S. in L.S., *Librarian*
Harriet V. Leonard (1960), M.Div., M.S. in L.S., *Reference Librarian*
Linda K. Gard, M.Div., *Circulation Librarian*
Alison C. Greene, B.A., *Assistant Circulation Librarian*
Debbie B. Griffith, M.A., M.T.S., *Assistant Librarian*

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 Dennis M. Campbell (1979), B.D., Ph.D., D.D., *Professor of Theology*
 Jerry D. Campbell (1985), M.Div., M.S. in L.S., Ph.D., *Professor of the Practice of Theological Bibliography*
 Ted A. Campbell (1985), Ph.D., *Assistant Professor of Church History*
 James Michael Efird (1962), B.D., Ph.D., *Professor of Biblical Languages and Interpretation*
 Donn Michael Farris (1950), M.Div., M.S. in L.S., *Professor of Theological Bibliography*
 Mary McClintock Fulkerson (1983), M.Div., Ph.D., *Instructor in Historical Theology*
 Paula E. Gilbert (1985), M.Div., Ph.D., *Instructor in American Christianity*
 Robert Clark Gregg (1974), S.T.B., Ph.D., *Associate Professor of Patristics and Medieval Church History*
 Stanley Hauerwas (1984), B.D., M.A., M.Phil., Ph.D., *Professor of Theological Ethics*
 Frederick Herzog (1960), Th.D., *Professor of Systematic Theology*
 *Osmond Kelly Ingram (1959), B.D., *Professor of Parish Ministry*
 Creighton Lacy (1953), B.D., Ph.D., *Professor of World Christianity*
 Thomas A. Langford (1956), B.D., Ph.D., D.D., *William Kellon Quick Professor of Theology and Methodist Studies*
 †Richard Lischer (1979), M.A., B.D., Ph.D., *Associate Professor of Homiletics*
 George Marsden (1986), B.D., Ph.D., *Professor of the History of Christianity in America*
 Paul A. Mickey (1970), B.D., Ph.D., *Associate Professor of Pastoral Theology*
 Roland E. Murphy (1971), M.A., S.T.D., S.S.L., *George Washington Ivey Professor of Biblical Studies*
 Carol Noren (1986), M.Div., Ph.D., *Assistant Professor of Homiletics*
 Russell E. Richey (1986), B.D., Ph.D., *Research Professor of Church History*
 Grant S. Shockley (1983), M.Div., Ed.D., *Professor of Christian Education*
 Dwight Moody Smith, Jr. (1965), B.D., Ph.D., *Professor of New Testament Interpretation*
 Harmon L. Smith (1962), B.D., Ph.D., *Professor of Moral Theology*
 David Curtis Steinmetz (1971), B.D., Th.D., *Professor of Church History and Doctrine*
 William C. Turner, Jr. (1982), M.Div., Ph.D., *Assistant Professor of Theology and Black Church Studies*
 Dan O. Via (1984), B.D., Ph.D., *Professor of New Testament*
 Geoffrey Wainwright (1983), B.D., Th.D., *Professor of Systematic Theology*
 John H. Westerhoff III (1974), S.T.B., Ed.D., *Professor of Religion and Education*
 William H. Willimon (1984), M.Div., S.T.D., *Professor of the Practice of Christian Ministry*
 Robert L. Wilson (1970), B.D., Ph.D., *Research Professor of Church and Society*

FACULTY, DEPARTMENT OF RELIGION

(Teachers in graduate program in religion whose courses are open to Divinity School students.)

Kalman Bland (1973), Ph.D., *Associate Professor of Judaic Studies*
 David G. Bradley (1949), Ph.D., *Professor of History of Religions*
 Elizabeth Clark (1982), Ph.D., *Professor of History of Christianity*
 Roger Corless (1970), Ph.D., *Associate Professor of History of Religions*
 Wesley A. Kort (1965), Ph.D., *Professor of Religion and Literature*
 Bruce B. Lawrence (1971), Ph.D., *Professor of History of Religions*
 C. Eric Lincoln (1976), Ph.D., *Professor of Sociology of Religion*
 Charles H. Long (1974), Ph.D., *Professor of History of Religions*
 Carol L. Meyers (1979), Ph.D., *Assistant Professor of Old Testament*
 Eric M. Meyers (1969), Ph.D., *Professor of Judaic Studies*
 Robert T. Osborn (1954), Ph.D., *Professor of Theology*
 Harry B. Partin (1964), Ph.D., *Associate Professor of History of Religions*
 Melvin K. H. Peters (1983), Ph.D., *Associate Professor of Old Testament*
 William H. Poteat (1960), Ph.D., *Professor of Religion and Culture*
 Sandra P. Robinson (1983), Ph.D., *Assistant Professor of History of Religions*
 Orval Wintermute (1958), Ph.D., *Professor of Old Testament*

*Sabbatical leave, fall 1986.

†Sabbatical leave, spring 1987.

RELATED FACULTY

- David A. Arcus (1985), M.Mus., M.M.A., *Instructor in Church Music and Director of Music*
P. Wesley Aitken (1953), B.D., Th.M., *Chaplain Supervisor of Duke Medical Center and Associate in Instruction, the Divinity School*
Teresa Berger (1985), L.Th., M.Th., Ph.D., *Visiting Assistant Professor of Ecumenical Theology*
Albert F. Fisher (1974), M.Div., *Adjunct Professor of Parish Work*
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Peter G. Keese (1973), S.T.B., Th.M., *Chaplain Supervisor of Duke Medical Center and Associate in Instruction, the Divinity School*

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- Frank Baker (1960), B.D., Ph.D., *Professor Emeritus of English Church History*
Waldo Beach (1946), B.D., Ph.D., *Professor of Christian Ethics*
Robert Earl Cushman (1945), B.D., Ph.D., Litt.D., *Research Professor Emeritus of Systematic Theology*
William David Davies (1966), M.A., F.B.A., D.Litt., *George Washington Ivey Professor Emeritus of Advanced Studies and Research in Christian Origins*
Stuart C. Henry (1959), B.D., Ph.D., *Professor Emeritus of American Christianity*
William Arthur Kale (1952), B.D., D.D., *Professor Emeritus of Christian Education*
M. Wilson Nesbitt (1958), B.D., D.D., *Adjunct Professor Emeritus of the Work of the Rural Church*
Ray C. Petry (1937), Ph.D., LL.D., *James B. Duke Professor Emeritus of Church History*
McMurry S. Richey (1954), B.D., Ph.D., *Professor Emeritus of Theology and Christian Nurture*
Charles K. Robinson (1961), B.D., Ph.D., *Associate Professor of Philosophical Theology*
John Jesse Rudin II (1945), B.D., Ph.D., *Associate Professor Emeritus of Liturgy and Worship*
H. Shelton Smith (1931), Ph.D., D.D., Litt.D., *James B. Duke Professor Emeritus of American Religious Thought*
William Franklin Stinespring (1936), Ph.D., *Professor Emeritus of Old Testament and Semitics*
Arley John Walton (1948), B.S.L., D.D., *Professor Emeritus of Church Administration and Director of Field Work*
Franklin Woodrow Young (1968), B.D., Ph.D., *Amos Ragan Kearns Professor Emeritus of New Testament and Patristic Studies*

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The Divinity School
Office of the Dean

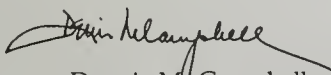
Among the many resources which support Duke's commitment to excellence in theological education, none is more important than the strong reputation which the Divinity School continues to enjoy as a school of the church. In the 60 years since its founding, more than 3,200 graduates have gone forth to serve in thousands of congregations around the globe. We regard that reputation as a sacred trust. We believe fulfilling that trust requires continuing boldness and imagination if we are to prepare students for ministries equal to the challenges of these perplexing times.

Duke's tradition of intellectual rigor in the service of the Church continues unabated. With the start of the fall 1985 semester, the Divinity School enrolled 392 students in its professional degree programs (M.Div., M.R.E., and Th.M.) and an additional 60 students in the M.A./Ph.D. program. Our students are men and women from 192 undergraduate schools, 22 denominations and 33 states. Women constitute just over 30 percent of the total enrollment, and black students constitute 10 percent. At a time when many schools are being forced to lower their entrance requirements, the Divinity School continues to maintain its historical commitment to high standards. The quality of our student body has never been better.

While the accomplishments of its distinguished faculty and scholars, and an aggressive international exchange program earn it increasing prominence in American theological education and the ecumenical world, the Divinity School continues to enjoy strong regional, denominational, and alumni support as well.

Finally, Duke's unique field educational program emphasizes both remunerative employment and vocational preparation. The program's generous funding from the Duke Endowment makes it possible for our students to advance their competency in ministry while receiving substantial financial assistance.

These are some of the resources which account for Duke's margin of excellence and provide reason to believe that the Divinity School's ministry in the service of the church will not only continue, but endure.


Dennis M. Campbell,
Dean

General Information



History

Duke University as it exists today developed from simple beginnings. Established in 1838, Union Institute became a normal college by 1851 and in 1859 was renamed Trinity College. In 1892 the college moved to Durham, North Carolina.

In 1924 James B. Duke established a trust fund for educational and charitable purposes. The chief beneficiary was Trinity College, which became Duke University. The purpose for establishing the trust was very clear: "I have selected Duke University as one of the principal objects of this trust because I recognize that education, when conducted along sane and practical, as opposed to dogmatic and theoretical lines, is, next to religion, the greatest civilizing influence And I advise that the courses at this institution be arranged, first, with special reference to the training of preachers, teachers, lawyers, and physicians, because these are most in the public eye, and by precept and example can do most to uplift mankind" The School of Religion began its work in the academic year 1926-27, and formal exercises for its opening were held on 9 November 1926. In 1940 the name was changed to the Divinity School.

During its history the Divinity School has had outstanding teachers, scholars, and administrative leaders,* and its graduates have distinguished themselves by making significant contributions to the church and the world. In 1964 a program of expansion was begun, culminating in February 1972, when the Divinity School doubled its physical facilities and moved into a handsome new building.

The Role of the Divinity School

The Divinity School represents theological inquiry and learning within the greater University. By history and indelible tradition, it stands within the Christian tradition, mindful of its distinctive lineage in and its continuing obligation to the United Methodist Church. The Divinity School, although United Methodist in tradition and dependency, receives students from many Christian denominations and offers its educational resources to representatives of the several communions who seek an education for church-related ministry. From its inception, it has been ecumenical in aspiration, teaching,

*Since the institution of the school in 1926, the following persons have served as Deans or Acting Deans: Edmund Davidson Soper, 1926-28; Elbert Russell, 1928-41; Paul Neff Garber, 1941-44; Harvie Branscomb, 1944-46; Gilbert T. Rowe, Acting Dean of the Faculty, 1946-47; Paul E. Root (elected in 1947 but died before assuming office); Harold A. Bosley; 1947-50; James Cannon III, Acting Dean 1950-51, Dean 1951-58; Robert Earl Cushman, 1958-71; Thomas A. Langford, 1971-81; Jameson Jones, 1981-82; Dennis M. Campbell, 1982—.

and practice, as well as in its faculty. Educational policy has consistently aspired to foster a Christian understanding "truly catholic, truly evangelical, and truly reformed."

The principal purpose of the Divinity School is the professional education for the ministry, which in today's world is manifested in a variety of forms. Although the conventional and inherited styles of ministry are now undergoing change, the Divinity School curriculum continues to prepare students for informed and discriminating discharge of the historic offices of church and congregation through the ministry of word and sacrament, pastoral care, and teaching. The Divinity School believes these offices will remain, although the form and context of the local church may change.

With this in mind, the Divinity School tries to prepare students for the mature performance of their vocation. It hopes to develop in each graduate a disciplined intelligence, informed by sound learning and equipped for worthy professional service. Its resources are offered to students with a diversity of ministerial aims, although the school seeks, by recruitment and financial support, to prepare persons for ordination or lay professional vocations in the churches. In all its endeavors, the Divinity School aims to serve the Church, the world, and primarily Jesus Christ the Lord of the Church.

The Relation of the Divinity School to Duke University

The Divinity School is an integral part of the University and shares fully in its activities, privileges, and responsibilities. The Sunday services in the University Chapel give Divinity School students each year an opportunity to hear several of the country's leading preachers. The University libraries make a rich collection of books and other materials easily accessible. Without paying additional fees, selected courses in the graduate and professional schools are open to Divinity School students, as well as the general, cultural, and recreational resources of the University.

Library Resources

Divinity School Library. The Divinity School Library contains a collection of more than 240,000 volumes in the field of religion and related disciplines and affords an unusual wealth of material for the seminary student. Although an integral part of the University's eleven-unit library system, which possesses more than 3,000,000 volumes, the Divinity School Library has its own separate facilities in the Divinity School Building. Its book collection is operated on the open stack system, and its reading rooms provide study facilities for students, space for the special reference collection in religion, and for the more than 600 religious periodicals to which the library currently subscribes.

Staffed by a librarian and a reference librarian trained in both theology and library administration, by a supporting staff of three persons, and by a number of student assistants, the Divinity School Library offers a variety of reference services to assist the student in selecting and locating materials. The staff, in cooperation with the faculty, maintains a book and periodical collection to support basic course work as well as advanced research in all major fields of religious studies.

The Divinity School Library is adjacent to the Perkins Library. The seminary student may use the resources and facilities of the Perkins Library, some of which include manuscripts, archives, public documents, newspapers, periodicals, microfilms, maps, rare materials (among which are eighty-one prized ancient Greek manuscripts), and reference assistance. There is a provision for borrowing books from the libraries of the University of North Carolina and other neighboring institutions.

The Henry Harrison Jordan Loan Library

Henry Harrison Jordan, (1862-1931), distinguished member of the Western North Carolina Conference, was memorialized by his children by the establishment of an endowment in 1947. The Divinity School Librarian is the custodian of books purchased under this fund for loan, through postal services, to qualified ministers of all denominations or localities. The Jordan Loan Library maintains a catalogue of up-to-date publications representative of the several theological disciplines and areas of the minister's professional interest. Books may be borrowed by application to the Librarian of the Divinity School.

Library Funds

The following funds provide resources to enrich the collections of the Divinity School Library.

Ormond Memorial Fund. Established in 1924 by Dr. J. M. Ormond, Trinity College Class of 1902, and Mrs. Ormond, in memory of his mother and father, Mr. and Mrs. J. J. Ormond, the income from the Ormond Memorial Fund is to be used for a collection of books on the rural church for the Divinity School Library at Duke University.

Avera Bible Fund. Established in 1895 by gift of Mrs. L. B. McCullers in memory of her husband, Willis H. Avera; the income to be used for the purchase of books for the Divinity School Library and for the support of the Avera Bible Lectures.

Louis W. Bailey Memorial Fund. This fund was established in 1958 by the Reverend A. Purnell Bailey in memory of his father. The income is to be used for books for the Divinity School Library.

Stuart C. Henry Collection Endowment Fund. This fund was established by the Class of 1975 in honor of Professor Henry with income from the fund to be used to purchase books in the collection on American Christianity.

The William Arthur Kale, Jr. Memorial Fund. William Arthur Kale, Jr. was a member of the Duke University Class of 1958, a lover of sacred art and music, and a member of the University Chapel Choir. In 1964 his parents, Professor and Mrs. William Arthur Kale, Sr., established a fund in his memory for the purchase of books and other materials in the area of fine arts and religious musicology for the perpetual enrichment of the holdings of the Divinity School Library.

The Walter McGowan and Minnie Daniel Upchurch Fund. Established in 1971 by W. M. Upchurch, Jr., an alumnus of Duke University and a member of its Board of Trustees, the fund, honoring Mr. Upchurch's mother and father, is used for the purchase of materials in the area of sacred music and is supplementary to a collection of materials given by Mr. Upchurch to the Divinity School Library. This collection includes 1,487 anthems and other compositions of sacred music, along with 62 disc recordings of the Duke University Summer Chapel Choir for the years 1937-41 when Mr. Upchurch was director of the choir.

Center for Studies in the Wesleyan Tradition

The Center for Studies in the Wesleyan Tradition was founded in 1979 and is supported by a permanent endowment of the Divinity School designated for its use. The center supports a wide variety of programs designed to advance teaching, research, and publication in Wesleyan history and theology.

Library. The Baker Collection is the largest and finest collection of Wesley and Methodist materials extant. Named for Professor Emeritus Frank Baker, the world's



foremost authority on John Wesley, and Editor of the Bicentennial Edition of Wesley's Works, a project based at Duke Divinity School, the Baker Collection is an unparalleled resource.

Visiting Professors. The center brings distinguished visiting professors to teach in the Divinity School. Recently, Dr. David Stacey, Principal of Wesley College, Bristol, England, and Dr. José Miguez Bonino, Professor of Theology and Ethics at the Protestant Theological Seminary in Buenos Aires, Argentina served in this capacity.

Visiting Scholars. The center makes research grants to scholars from around the world to work for various periods of time in the Divinity School. Among those who have served recently are Bishop Ole Borgen, United Methodist Bishop of Sweden, Norway, Denmark, Finland, and Estonia, and Professor Morna Hooker, Lady Margaret Professor of Divinity, Cambridge University, England.

Visiting Lecturers. The center has an extensive program of visiting lecturers which exposes students and faculty of the Divinity School to leading figures in the Wesleyan tradition from throughout the world. Most recently these included: Professor Peder Borgen, University of Trondheim, Norway; Dr. Manfred Marquardt, the Methodist Theological Seminary, Reutlingen, West Germany; Dr. Rutiger Minor, the Methodist Seminary in East Germany; the Reverend Helmut Nausner, District Superintendent, Vienna, Austria; Professor Norman Young, Principal of Queens College, the University of Melbourne, Australia; and Dean Walter Klaiber, Methodist Theological Seminary, Rentington, West Germany.

Publications. The center is committed to a program of scholarly publication. In 1983, support was given for preparation of a reader in theology in the Wesleyan tradition to be published in 1984.

Faculty Committee. Divinity School faculty related to the center include Professor Thomas A. Langford, Professor Geoffrey Wainwright, Professor Robert L. Wilson, Bishop W. Kenneth Goodson, and Professor Dennis M. Campbell, Dean and Chairman.

Books and Religion

Since 1984, Duke Divinity School has been publishing *Books & Religion*—the *only* magazine in its field written and edited for the general reader—out of the conviction that whatever else it is, religion is not boring. And writing about it shouldn't be. Hailed by the *Chicago Tribune* as "a small but scrappy journal of criticism, essays, and cartoons," *Books & Religion* is the centerpiece of the Divinity School's ambitious effort to increase public awareness of the relevance of the nation's principal religious resources to the problems confronting the world today. That's a point of view not otherwise provided by established secular media predisposed to regard religion with hostility, suspicion, or indifference.

The Divinity School began publishing *Books & Religion* to provide a forum for that point of view, out of the conviction that a new kind of journal could foster communication across the barriers that separate the people in the pews, the clergy in the pulpits, and the scholars in the seminaries and universities of our land. At a time when most publications on religion are either too partisan, too specialized, or too superficial, *Books & Religion* offers an editorial product which can hold its own in the marketplace of ideas, and hold the interest of the common reader curious about religion in American life.

Thanks to the generous support of Duke Divinity School, *Books & Religion* has assembled a group of writers, artists, and editors able to apply clear thinking, crisp writing, and true wit to the interplay of religion and American life and culture. *Books & Religion's* progress has been gratifying over the past year. But there is still much work to be done if this exciting publication is to exert its potential influence in American culture as the *only* publication dedicated to timely and dependable coverage of the broad range of American religious thought and scholarship—Protestant, Catholic and Jewish, conservative and liberal, popular and scholarly.

Admissions



Requirements and Procedures

The Divinity School is a fully accredited member of the Association of Theological Schools and is one of thirteen accredited seminaries of the United Methodist Church. It considers candidates for admission who hold an A.B. degree, or its equivalent, from a college approved by a regional accrediting body.

Preseminary Curriculum. The Divinity School follows the guidelines of the Association of Theological Schools with respect to undergraduate preparation for theological study. In general, this means a strong background in liberal arts, especially the humanities. A well-rounded background in English language and literature, history, philosophy, psychology, religion, social science, and foreign languages is especially desirable.

Application Procedures for Master of Divinity and Master of Religious Education Programs. Application forms secured from the admissions office should be filed six to twelve months in advance of the intended date of enrollment. Ordinarily, no application for a degree program will be accepted after 15 May and 1 November for August and January enrollments, respectively. The student should provide the following supporting documents and information: (1) one copy of the official transcript from each college, university, or seminary attended sent by the institution directly to the Assistant Dean for Admissions; (2) one supplementary transcript, sent as soon as possible, showing completion of work which was in progress when the earlier transcript was made; and (3) the names of five persons who are best qualified to judge the applicant as a prospective student in the Divinity School and who will be contacted by the school for written letters of recommendation. *Materials submitted in support of an application are not released for other purposes and cannot be returned to the applicant.*

Applicants are strongly urged to come for on-campus visits and interviews prior to final admission. A minimum of thirty days is required to process any application for a degree program.

Graduates of unaccredited senior colleges and universities may apply for admission, but will be considered for admission only on a limited program basis (see next page).

Application Procedures for Master of Theology Program. Application forms can be secured from the admissions office and should be filed six to twelve months in advance of the intended date of enrollment. Ordinarily, no application for the Th.M. degree will be accepted after 15 May and 1 November for August and January enrollments, respectively. The student should provide the following supporting documents and information: (1) one copy of the official transcript from each college, university,

or seminary attended sent directly to the Assistant Dean for Admissions by the institution; (2) one supplementary transcript, sent as soon as possible, from the seminary showing completion of work which was in progress when the earlier transcript was made; (3) the names of three seminary professors who are best qualified to judge the applicant as a prospective student in the Divinity School and who will be contacted by the school for written letters of recommendation; (4) the name of one denominational official qualified to appraise the applicant's ministerial work who will be contacted by the school for a written letter of recommendation; and (5) scores from either the Graduate Record Examination or the Miller Analogies Test sent directly to the school. *Materials submitted in support of an application are not released for other purposes and cannot be returned to the applicant.*

Additional Procedures for International Students. Fully qualified students from outside the United States are welcome to apply for admission to the Divinity School. In applying for admission the international student must, in addition to the information required of all students, submit with the application material: (1) if the student's native language is not English, certification of English proficiency demonstrated by scores from the Test of English as a Foreign Language (TOEFL), administered through the Educational Testing Service in Princeton, New Jersey, (the Divinity School requires a score of 550 or higher on the TOEFL); (2) a statement of endorsement from an official of the student's national ecclesiastical body, affirming that ecclesiastical body's support for the student's pursuit of theological studies in the United States and welcoming the student into active ministry under its jurisdiction following the student's study in this country; and (3) a statement demonstrating financial arrangements for the proposed term at the Divinity School (estimated costs per calendar year are \$15,000*). *An international student must submit scores from the TOEFL, a financial statement, an endorsement by an official of an ecclesiastical body, and have all transcripts and five letters of recommendation sent to the Admissions Office of the Divinity School before the Divinity School will make any offer of admission.*

Admission Requirements. Those persons are encouraged to apply:

1. who have or will have been awarded a bachelor's degree from a regionally accredited college or university prior to their intended date of enrollment;
2. who have attained at least an overall B-(2.65 on 4.0 scale) academic average; and
3. who are committed to some form of ordained or lay ministry.

Applicants are evaluated on the basis of academic attainment, future promise for ministry, and vocational clarity and commitment.

Admission on Limited Program. Limited program is a special relation between the school and the student, designed to encourage and support academic achievement. Students may be admitted on limited program for a number of reasons including an undergraduate degree in a program other than liberal arts, an undergraduate degree from a nonaccredited college, or an undergraduate transcript that does not fully meet Divinity School standards.

Limited program means reduced schedules of work, with the amount determined by the Associate Dean for Curricular Affairs (ordinarily no more than three courses each of the first two semesters), and also includes a review of work at the end of each semester by the Committee on Academic Standing until limited program status is lifted.

Admission as a Special Student. Special student status is a restricted category of admission for persons who do not have need of a degree program and who desire

*Figures are based on 1985-86 charges and are subject to change.



access to the rich offerings of the Divinity School curriculum for particular purposes. Special student status may be granted after a person has submitted an application and all transcripts of undergraduate academic work and when all three letters of recommendation have been received from listed references. Applications for special student status must be submitted at least thirty days prior to the intended date of enrollment. *Special students are ineligible for any form of financial assistance through the Divinity School.*

Admission Acceptance. Applicants are expected to indicate their acceptance of admission within three weeks of notification and to confirm this with the payment of an admission fee of \$50. Upon matriculation, this fee is applied to the first semester tuition charge.

To complete admission students must provide a certificate of immunization and general health to the student health service. The admission office must also receive a final transcript verifying the conferral of the undergraduate (for the M.Div. and M.R.E.) or seminary (for the Th.M.) degree.

Persons who do not matriculate at the time for which they were originally admitted forfeit admission unless they present a written request for postponement to the Assistant Dean for Admissions and Student Life.

Transfer of Credit. Transfer of credit from theological schools accredited by the Association of Theological Schools is allowed by the Divinity School towards the Master of Divinity and Master of Religious Education degrees only. Credit from another institution will normally be limited to one-third of the total number of credits required for graduation by the Divinity School. In each case a letter of honorable dismissal from the school from which transfer is made is required along with a transcript of academic credits. Applicants for transfer into a degree program are evaluated on the same basis as other applicants.

Conduct of Students

Duke University expects and will require of all its students continuing loyal cooperation in developing and maintaining high standards of scholarship and conduct. The University wishes to emphasize its policy that all students are subject to the rules and regulations of the University currently in effect, or which are put into effect from time to time by the appropriate authorities of the University. Any student, in accepting admission, indicates willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension and/or expulsion, as may be deemed appropriate, for failure to abide by such rules and regulations or for conduct adjudged unsatisfactory or detrimental to the University.

The Divinity School expects its students to participate in a communally shared concern for growth in life appropriate to Christian faith and to the dignity of their calling.

Readmission to Duke Divinity School

Persons seeking readmission to the Divinity School's degree programs must complete the following requirements: (1) submit a new application; (2) submit an additional statement detailing reasons for withdrawal and reasons for seeking readmission at this time, and describing activities and employment undertaken since withdrawal; (3) submit the names of at least three persons willing to serve as references, one of which must be an ecclesiastical official; and (4) transcripts of all academic work undertaken since withdrawal from the Divinity School.

These new materials, supplemented by the individual's original application and Divinity School academic and field education files, will be reviewed by the members



of the Admissions Committee for an admission decision. An interview with the Assistant Dean for Admissions prior to the processing of the application for readmission is encouraged and may be required. Any questions about readmission procedures should be addressed to the Assistant Dean for Admissions. Applications for readmission will be evaluated on the basis of academic attainment, future promise for the ministry, and vocational clarity and commitment.

Community Life



Corporate Worship

One of the most important aspects of training for Christian life is vigorous, inspiring, and varied participation in corporate worship. This corporate life of the Divinity School is centered in York Chapel where three services are held weekly—a service of prayer on Tuesday, a service of preaching on Wednesday, and a service of word and table on Thursday. These services are led by members of the faculty, and student body, and guests. Services are voluntary but have been and will continue to be sources of inspiration and strength to the members of the community.

The Divinity School enjoys a particularly close relationship with Duke Chapel. Throughout the year, Divinity School administrators and faculty, as well as guests of national and international stature, preach at Sunday morning worship services. Each year several or more of our students join the 200-plus member Duke Chapel Choir which provides choral music on Sunday mornings and special music programs throughout the academic year, including an annual Christmas performance of Handel's *Messiah*.

Divinity students and faculty also contribute to the leadership of the ministry of Duke Chapel by chairing and serving on standing committees: Faith and the Arts, Supportive Ministries, Worship, Prophetic Concerns, and Leadership and Development.

Living Accommodations

Town House Apartments. Duke University operates Town House Apartments primarily for graduate and professional school students. Others may be housed if vacancies exist. The setting of these apartments provides single graduate students a comfortable, home-like atmosphere as an alternative to residence halls. Sixteen of the thirty-two air-conditioned apartments are equipped for two students, and the remaining sixteen units are equipped for three students.

Central Campus Apartments. Duke University operates a 500-unit housing facility known as Central Campus Apartments. The complex provides basic housing for undergraduate and single graduate students. Assignments are made on a first-apply, first-assigned basis.

One-bedroom and two-bedroom apartments are fully furnished.

Application Procedures. When students are informed of their acceptance to the Divinity School, they will also receive a form on which to indicate their preference for University housing. This form should be returned to the Department of Housing Management. Detailed information on the types of accommodations, and application

forms, will be forwarded to the accepted student. However, if additional information is desired prior to a student's acceptance, please write to the Department of Housing Management, Duke University, Durham, North Carolina 27706.

Off-Campus Housing. The Department of Housing Management maintains lists of rental apartments, rooms, and houses provided by Durham property owners or real estate agents who will agree not to discriminate in the rental of property because of race, sex, creed, or nationality of a prospective tenant. These lists are available in the Central Campus office. Off-campus rental properties are not inspected or approved, nor does the University or its agents negotiate with owners for students, faculty, or staff. Many divinity students choose to live in off-campus apartment complexes because of their proximity to the school. A listing of such complexes can be secured from the Department of Housing Management of the University or from the Office of Admissions and Student Life of the Divinity School.

Food Services. Food service facilities located throughout the Duke campus include both board plan and cash operations. Graduate and professional students are welcome to eat in any of the board plan cafeterias at guest meal prices or they may participate voluntarily in any of the point plans. Details are available from the Food Services Business Office, 106 West Campus Union Building. Board plans in the Blue and White Room Cafeteria and the East Court Cafeteria provide participants and their guests with unlimited seconds-style meals throughout the week at set prices. Dining facilities on the West Campus include a cafeteria with multiple-choice menus, the Oak Room with table service, and the Cambridge Inn with fast foods and beverages. The Bryan Center has a snack bar and a Rathskeller, both open all week, morning through late evening. East Campus has cafeteria service and a snack bar. Trent Drive Hall has a public cafeteria and Gradel's, a snack bar/delicatessen. Duke University Food Services is the largest student employer on campus, and hires students in almost every food operation. A listing of open positions and areas is available from the Personnel Office, 106 West Campus Union Building.

Student Health

The aim of the University health service is to provide medical care and health advice necessary to help the student enjoy the University community. To serve this purpose, both the University health service clinic and the University infirmary are available for student health care needs. A separate fee for this service is assessed.

The main components of the health service include the University health service clinic, located in the Pickens Building on West Campus, and the University infirmary on the East Campus. Emergency transportation, if required, can be obtained from the Duke campus police. Residential staff personnel should be consulted whenever possible for assistance in obtaining emergency treatment.

The facilities of the University health service clinic are available during both regular and summer sessions to all currently enrolled full-time students. The facilities of the University infirmary are available during the regular sessions from the opening of the University in the fall until graduation day in the spring to all currently enrolled full-time students.

The University has made arrangements for a Student Accident and Sickness Insurance Plan to cover all full-time students for a twelve-month period. For additional fees a student may obtain coverage for a spouse or spouse and child. Although participation in this program is voluntary, the University expects all graduate students to be financially responsible for medical expenses above those covered by the University student health program through the University accident and sickness policy, a private policy, or personal financial resources. Students who have equivalent medical insurance or wish to accept the financial responsibility for any medical expense may elect

not to take the Duke plan by signing a statement to this effect. Each full-time student in residence must purchase this student health insurance or indicate the alternative arrangement. The student accident and sickness insurance policy provides protection twenty-four hours per day during the full twelve-month term of the policy for each student insured. Students are covered on and off campus, at home, or while traveling between home and school and during interim vacation periods. Term of the policy is from opening day in the fall. Coverage and services are subject to change each year as deemed necessary by the University in terms of costs and usage.

All full-time and part-time degree candidate students are required to enroll in the Student Accident and Sickness Insurance Policy unless they show evidence by completing the appropriate waiver statement contained on the remittance form of the University invoice indicating that they are covered by other generally comparable insurance. This statement requires that the name of the insurance company and the policy number be indicated as well as the signature of the student or parent. Also, this requirement may be waived by signing the appropriate space on the University invoice indicating willingness to assume the medical costs of any sickness or accident.

Married students are expected to be financially responsible for their dependents, providing for hospital, medical, and surgical care, since their dependents are not covered at any time by student health.

The resources of the Duke University Medical Center are available to all Duke students and their spouses and children. Charges for any and all services received from the Medical Center are the responsibility of the student as are the charges for services received from physicians and hospitals not associated with Duke University.

Counseling and Psychological Services. Counseling and Psychological Services (CAPS) is a component of student services which provides a coordinated, comprehensive range of counseling and developmental services to assist and promote the personal growth of Duke students. The professional staff is composed of psychologists, clinical social workers, and psychiatrists experienced in working with young adults. They provide evaluation and brief counseling/psychotherapy regarding a wide range of concerns, including such issues as self-esteem and identity, family relationships, academic performance, dating, intimacy, and sexual concerns. While students' visits with counselors are usually by appointment, a walk-in consultation service is provided two hours each weekday for students with urgent personal concerns.

Each year CAPS offers a series of self-development seminars focusing on skills development and special interests. These explore such interests as stress management, assertiveness training, career planning, couples' communication, and study skills. Interested students may call or come by CAPS for further information.

As Duke's center for administration of national testing programs, CAPS also offers a wide variety of graduate/professional school admission tests and professional licensure and certification examinations. The staff is also available to the entire University community for consultation and educational activities in student development and mental health issues affecting not only individual students but the campus community as a whole. They work with campus personnel, including administrators, faculty, student health staff, religious life staff, resident advisers, and student groups, in meeting needs identified through such liaisons. Staff members are available to lead workshops and discussion groups on topics of interest to students.

CAPS maintains a policy of *strict confidentiality* concerning information about each student's contact with the CAPS staff. If a student desires that information be released to anyone, written authorization must be given by the student for such release.

There are no charges for initial evaluation, brief counseling/psychotherapy, or self-development seminars. If appropriate, referral may be made to other staff members or a wide variety of local resources.

Appointments may be made by calling 684-5100 or coming by the office in 214 Old Chemistry Building, West Campus, between 8:00 A.M. and 5:00 P.M. Monday through Friday. If a student's concern needs immediate attention, that should be made known to the secretary, and every effort will be made to arrange for the student to talk with a staff member at the earliest possible time.

Motor Vehicles

Each student possessing or maintaining a motor vehicle at Duke University must register it at the beginning of the academic year in the security office at 2010 Campus Drive. If a motor vehicle is acquired and maintained at Duke University after academic registration, it must be registered within five calendar days after operation on the campuses begins. Resident students are required to pay an annual fee of \$30 for each motor vehicle or \$15 for each two-wheeled motor vehicle. Students first registering after 1 January are required to pay \$20 for a motor vehicle or \$10 for a two-wheeled motor vehicle.

At the time of registration of a motor vehicle, the following documents must be presented: the state vehicle registration certificate, a valid driver's license, and satisfactory evidence of automobile liability insurance coverage with limits of at least \$10,000 per person and \$20,000 per accident for personal injuries, and \$5,000 for property damage, as required by the North Carolina motor vehicle law.

If a motor vehicle or a two-wheeled motor vehicle is removed from the campus permanently and the decal is returned to the traffic office prior to 20 January there will be a refund of \$15 for a motor vehicle and \$7.50 for a two-wheeled motor vehicle.

Student Activities and Organizations

In the absence of common living and dining accommodations, community life in the Divinity School centers around a number of organizations and activities. The richness of life prevents more than a very selective listing of activities and organizations.

A primary center for community is a morning chapel service held every Tuesday, Wednesday, and Thursday in York Chapel while school is in session. Faculty and students share joint responsibility for these services. Other worship opportunities available through Duke Chapel include morning prayer services on weekdays during the school year and regular Sunday services all year long.

Several informal groups exist whose major purpose is to provide students with opportunities to express and share personal, professional, and spiritual developments with each other in weekly meetings on the campus and at home.

The Student Association. The officers of the Student Association are elected and serve as an executive committee for conduct of the business of the Representative Assembly.

The purpose of the association is to channel the interests and concerns of Divinity School students to the following ends:

1. to provide student programs and activities;
2. to represent students to the faculty and administration;
3. to represent students with other Duke University organizations; and
4. to represent students in extra-University affairs.

The Community Life Committee of the Student Representative Assembly annually plans at least six community-wide events for students and faculty. Weekend retreats present students with an opportunity to become better acquainted with each other and with faculty, and to explore matters of personal, professional, or spiritual concern. Dialogues on ministry occurring through the year help introduce students to practicing ministers and their personal, professional, and spiritual struggles and growth.



Divinity School Choir. A student organization of long standing is the Divinity School Choir. Membership is open to all qualified students. The choir sings regularly for weekday worship and at special seasonal programs and services. New members are chosen by informal auditions which are arranged for all who are interested.

Divinity Spouses. Divinity Spouses is an organization which offers the spouses of regularly enrolled students opportunities for sharing interests and concerns. The spouses' program, which includes topical monthly meetings with a variety of speakers, small interest groups, and special projects, seeks to encourage and provide ways for spouses to become a more integral part of the Divinity School community. Monthly meetings are open to all persons. A favorite event each year is a progressive dinner for couples involving the visitation of a number of faculty homes.

Black Seminarians' Union. This is an organization of black students whose major purpose is to insure the development of a theological perspective commensurate with the Gospel of Jesus Christ and relevant to the needs of black seminarians and the black church and to improve the quality of life academically, spiritually, politically, and socially in the Divinity School.

Student Pastors' Association. Students actively serving their denominations in an ordained or lay capacity have the opportunity to meet, to share, to plan, and to act on their common needs and concerns.

Women's Center. The Women's Center serves the entire Divinity School community through a focus on the special needs and contributions of women in ministry in and to the Church and society. The office, coordinated by two divinity women students, is a resource center for the whole community, in addition to a support and action center for women in particular.

Theological Students Fellowship. This organization provides fellowship, scholarship resources, and weekly prayer groups for all students interested in the evangelical tradition. Evening meetings with dinner, singing and prayer, a weekly sharing group at the school, and a monthly lecture series provide integration of academic and spiritual aspects of seminary life.

Christian Educators Fellowship. As a professional organization for persons who serve or intend to serve as professional Christian educators, CEF interprets the role of the Christian educator in the total ministry of the Church and provides support, fellowship, and professional relationships. In addition to monthly program meetings, a Christian education emphasis week is held each spring.

Cultural Resources

Divinity School students enjoy access to the many resources of the University community, particularly in the area of the performing arts. Two active campus film societies sponsor screenings of major motion pictures on Saturday and Sunday evenings. Other films of a classical nature are offered on Tuesday through Thursday nights, with free films for children scheduled every other Saturday morning. Opportunities in music, dance, and drama are provided by the following: the Duke Artists Series, Broadway at Duke, the Chamber Arts Society, Hoof 'n Horn, the Duke University Collegium Musicum, Duke Players, Duke Dance, the Duke University Symphony Orchestra and the Wind Symphony, the Duke University Jazz Ensemble, the Ciompi Quartet, Dance Black, and the Modern Black Mass Choir, among others.

Athletic Programs

In addition to unrestricted access to all University athletic and recreational facilities, divinity students enjoy other benefits from Duke's commitment to college ath-

letics. The University is a member of the Atlantic Coast Conference of the National College Athletic Association, and offers intercollegiate competition in a variety of sports. Special admission rates to football and basketball games are available to graduate and professional students. The University supports a strong intramural program in which the Divinity School participates enthusiastically. In recent seasons the school has fielded teams in football, men's, women's, and co-rec basketball, volleyball, soccer, and softball.

Financial Information



Fees and Expenses

Estimated Living Expenses. The total cost for a student to attend the Duke Divinity School varies according to individual tastes and requirements; however, experience indicates that a single student may expect to spend a minimum of \$10,450 for nine months and a married couple may expect to spend a minimum of \$15,000 for twelve months.

Housing Fees. Estimated minimal on-campus housing cost for a single student will be approximately \$2,400 during 1986-87. An efficiency apartment for a married couple on campus will cost approximately \$373 per month for the academic term.

Housing fees are subject to change prior to the new academic year. A \$100 deposit is required on all reservations.

Rates for Central Campus Apartments will be quoted to applying students upon request to the manager of apartments and property. Refunds on housing fees will be made in accordance with the established schedules of the University.

Master of Divinity and Master of Religious Education Candidates. The table below lists basic minimum expenditures. In addition to the fees cited here, there is an admission fee of \$50 which is applied to the first term bill and a room deposit of \$100. See relevant sections on admissions and housing for full details.

	<i>Per Semester</i>	<i>Per Year</i>
Tuition—M.Div. and M.R.E.	\$2,440	\$4,880
Student Health Fee	101	202
Approximate Cost of Meals	1,000	2,000
Student Representation Association Fee	575 8	16

Tuition will be charged at the rate of ~~\$575~~ ^{\$610} per course. The figures shown are for a program carrying eight courses per year. Students will be charged for additional course enrollments.

Master of Theology Candidates. A student who is a candidate for the Th.M. degree will be liable for tuition on the basis of eight courses at the rate of ~~\$575~~ ^{\$610} per course. All other costs and regulations for the Th.M. degree are the same as those for the M.Div. and M.R.E. degrees. Th.M. students are not ordinarily eligible for student financial aid.

Special Student. A special student is one who is enrolled for academic credit, but who is not a candidate for a degree at that time. The tuition will be charged on a course basis. Other costs and regulations are the same as those for the M.Div. and M.R.E. candidates. No financial aid is available.

Audit Fee. Anyone seeking to audit a course in the Divinity School must, with the consent of the instructor concerned, secure permission from the Associate Dean's office. In accordance with the general University practice, a fee of \$85 per course will be charged to all auditors who are not enrolled as full-time students.

Athletic Fee. Divinity School students may secure admission to all regularly scheduled University athletic contests held on the University grounds during the entire academic year by payment of the athletic fee of \$100 per year plus any federal tax that may be imposed. The fee is payable in the fall semester.

Payment and Penalty. Monthly invoices for tuition, fees, and other charges will be sent by the Bursar's office which are payable by the invoice due date; no deferred payment plans are available. As a part of the agreement of admission to Duke University a student is required to pay all invoices as presented. If full payment is not received, a late payment charge as described below will be assessed on the next invoice and also certain restrictions as stated below will be applied.

If payment in the amount of the total amount due on the student invoice is not received by the invoice due date, a penalty charge will be accrued from the billing date of the invoice. The penalty charge will be at a rate of $1\frac{1}{3}$ percent per month (16 percent per annum) applied to the past due balance on the student invoice. The past due balance is defined as the previous balance less any payments and credits received during the current month and also any student loan memo credits, related to the previous balance, which appear on the invoice.

An individual will be in default of this agreement if the total amount due on the student invoice is not paid in full by the invoice due date. An individual who is in default will not be allowed to register for classes, receive a transcript of academic records, have academic credits certified, be granted a leave of absence, or receive a diploma at graduation. In addition, an individual in default may be subject to withdrawal from school.

Refunds of tuition and fees are governed by the following policy:

In the event of death a full tuition and fees refund will be granted.

In all other cases of withdrawal from school tuition will be refunded according to the following schedule: withdrawal before the opening of classes—a full refund; withdrawal during the first or second week—80 percent; withdrawal during the third through fifth week—60 percent; withdrawal during the sixth week—20 percent; withdrawal after the sixth week—no refund. No refund will be granted for reduction in course load.

Tuition or other charges paid from grants or loans will be restored to those funds on the same prorated basis and will be refunded to the student or carried forward.

These regulations apply to all Divinity School students—degree candidates, special students, and auditors.

Debts. No records are released, and no students are considered by the faculty as candidates for graduation, until they have settled with the Bursar for all indebtedness. Bills may be sent to parents or guardians provided the Bursar has been requested in writing to do so. Failure to pay all University charges on or before the times specified by the University for the semester will bar the student from class attendance until the account is settled in full.

Motor Vehicle Registration Fee. There is a \$30 registration fee for all automobiles (\$15 for two-wheeled motor vehicles) used on campus. For specifics see the chapter "Community Life."

Student Financial Aid

A student should select a school on the basis of educational opportunity. At the same time financial consideration will be a legitimate and often pressing concern.

Each student should formulate at least a tentative plan for financing the entire seminary education. Although the exact method of financing the full theological degree may not be assured at the beginning, a student should have a clear understanding of the expenses and available sources of income for the first year and the assurance that there exist ways of financing subsequent years.

The Committee on Financial Aid will counsel the student concerning financial needs and possible resources. There is constant review of available resources in order to assist the greatest number of students. However, the basic financial responsibility belongs to the student who is expected to rely upon personal and family resources and earning and borrowing power. Other resources may include the student's church, civic groups, foundations, and resources of the school which may include grants, loans, field education grants, and employment. It is the goal of the financial aid office to assist each student in planning a financial program so that as little indebtedness as possible will be incurred.

The total amount available through the Divinity School is limited. Further, the conditions set forth by the individual or institutional donors determine the circumstances under which the grants can be made. Almost without exception the donors require ecclesiastical endorsement and/or declaration of ministerial vocational aim.

The principles regarding the disbursement of financial aid are as follows:

1. Financial aid is recommended on the basis of demonstrated need. All students must file an application which substantiates need and provides full information on potential resources. This is essential in order to make Divinity School funds available to the greatest number of students. In order to receive assistance in any form from the Divinity School, a student must be enrolled for at least three courses per semester and maintain an overall academic average of 2.0 or higher.
2. Grants will be made within the limits of the conditions set forth governing each source.
3. The conditions at the beginning of the academic year determining financial needs shall be the governing criteria for the year. Financial aid programs are set up on a yearly basis, except for those students who may enter the second semester and/or those few whose status may change.
4. Financial aid grants are made on a one-year basis. The assistance may consist of scholarships, loans, tuition grants, grants-in-aid, field education grants, and employment, which may be worked out in various combinations on a yearly basis. A new application must be filed each year.
5. Grants in aid, or "tuition grants," are ballooned for the first year of study to assist students as much as possible through their transitional first year at Duke. Consequently grants for the second and third years of study will be somewhat less than those awarded for the critical first year.
6. Application for financial aid may be made by entering students at time of admission or currently enrolled students by December 1. Notification will be given after committee approval. Student pastors serving United Methodist churches can be notified after the pastoral charge and Annual Conference determine salary schedules. Financial aid applications for students anticipating fall matriculation are reviewed beginning the prior December. Applications for assistance will not be accepted after June 1 for August enrollment or after December 15 for January enrollment.
7. Ordinarily financial aid is not available beyond six semesters (eight for pastors on reduced load).
8. Students who have questions about the Divinity School's response to their financial aid request should first speak with the financial aid secretary. Where

desired, students may file an appeals form for full review by the financial aid appeals committee.

9. Special students and Th.M. students (with the exception of one international scholar annually) are not eligible for any form of financial assistance from the Divinity School. Th.M. students are eligible to apply for denominational and federal loans.

Financial Resources

Personal. In order that both the church and the Divinity School may be able to extend the use of their limited funds to as many students as possible, a student who desires a theological education should be willing to defray as far as possible the cost of such an education. Resources may include savings, earnings, gifts, support or loans, and if married, earnings of a spouse. In calculating anticipated income, the student first considers personal resources.

Church. Many local churches and conferences or other governing bodies provide gifts and grants for theological education, such as ministerial education funds which provide grants and/or service loans to theological students. The student makes application to the home church, Annual Conference, Presbytery, or other governing body. The financial aid office cooperates with these church agencies in making recommendations and in handling the funds. *United Methodist students and others must be under the care of the appropriate church body to be eligible for church support.* The school cannot compensate for a student's indisposition to receive church funds when such are available on application through the Annual Conference Ministerial Education Fund or other agencies.

The Divinity School, as a member school of the Association of United Methodist Theological Schools, takes cognizance of and subscribes to recommended policy and practice regarding the administration of United Methodist Church funds for student financial aid as adopted by the association, 1 June 1970, and as bearing upon tuition grants, as follows:

Resources for tuition grants, scholarships or the like are primarily available to students with declared vocational aims leading to ordination or recognized lay ministries and supported by commendation or endorsement of appropriate church representatives. At the same time, we believe that consideration for a tuition grant may be accorded to students who adequately indicate conscientious concern to explore, through seminary studies, a recognized church-related vocation. Finally, it is our judgment that, where the above-mentioned conditions are deemed to be absent respecting a candidate for admission, the decision to admit such a candidate should be without the assurance of any tuition subsidy deriving from church funds. (AUMTS Minutes, 1 June 1970.)

Divinity School Scholarships. A limited number of scholarships are available to encourage qualified students to pursue their preparation for the Christian ministry.

Scholarships for Academic Merit. Each year the Divinity School awards ten scholarships to entering junior students on the basis of academic excellence in their undergraduate programs and promise for Christian ministry. The specific amount of a scholarship for academic merit will depend upon a student's demonstrated financial need and will not exceed a maximum \$4,000.

Ten scholarships for academic achievement are given for the middler and senior years of study. These awards go to those students with the greatest promise of service to the Church and highest academic achievement. The scholarship ranges up to \$4,000 in value, depending upon the recipient's *demonstrated* financial need, and academic course load.

The Dean's Scholarship. The Dean's scholarships will be awarded to at least ten recipients each year. These persons must represent strong promise for Christian ministry, academic achievement, and demonstrated financial need. Factors which will be taken into account are ethnic origin, missional responsibilities for the Church at

home and abroad, and special denominational needs. The specific amount of the scholarship will be based upon demonstrated need and may go up to \$3,500 per year. The scholarship is renewable for two years assuming continued academic attainment, development of ministerial promise, and demonstrated financial need.

International Student Scholarships. In cooperation with the Crusade Scholarship Committee of the United Methodist Church and other authorized church agencies, students are selected and admitted to courses of study. Scholarships for such students are provided from the Lewis Clarence Kerner Scholarship Fund and from individual churches and private philanthropy.

Tuition Grants. These are available in amounts commensurate with demonstrated need as adjudged by the Committee on Financial Aid. Entering students may apply, on notice of admission, by submitting the financial aid application to the Office of Financial Aid. Enrolled students may apply by annual renewal of their financial aid request. Because of the purpose and attendant educational objectives of the school, resources for tuition grants are primarily available to students with declared aims leading to ordination or recognized lay ministries.

Field Education Grants. Varying amounts ranging from \$1,900 (winter) to \$4,200 (summer) are made available through the Divinity School to students who choose to participate in the field education program. The Offices of Field Education and Financial Aid work together in determining placement and grant amount. This program includes the summer interns, winter interns, and student pastors. See full description under the section on field education.

Duke Endowment Student Pastor Grants. United Methodist students serving under episcopal appointment as student pastors in the state of North Carolina may qualify for tuition assistance of no more than \$2,100 through the Duke Endowment. The Financial Aid Committee will determine student eligibility for such assistance after appointments are read at the meetings of the two North Carolina United Methodist Annual Conferences.

Loans. Loan funds held in trust by the University, as well as United Methodist student loans and funds supplied by the federal government through the National Defense Education Act of 1958 are available to qualified students. The application must be submitted by 1 July.

Unless otherwise indicated, all correspondence concerning financial aid should be directed to: Financial Aid Office, The Divinity School, Duke University, Durham, North Carolina 27706.

Employment. Students or spouses desiring employment with the University should apply to the Director of Personnel, Duke University. Students or spouses make their own arrangements for employment either in the city of Durham or on campus.

Endowed Funds

Certain special funds have been established as endowments, the income from which is used to provide financial aid through scholarships and field education grants for students, support for professorships, and enhancement of the Divinity School program. The funds listed below serve as essential resources for the preparation of persons for leadership in Christian ministry.

Alumni Scholarship Fund was established in 1976 by the alumni of the Divinity School to provide financial support for ministerial candidates.

The Martha Anne Hills Andrews and John Spell Andrews Scholarship Fund was established in 1985 by Don W. Andrews in memory of his wife, Martha Anne,

Divinity School Class of 1982, and their son, John. The fund income provides student scholarships with preference given to women and men from South Carolina.

The R. Ernest Atkinson Legacy was established in 1952 under the will of the Reverend R. Ernest Atkinson, Trinity College Class of 1917, Richmond, Virginia, for ministerial student assistance.

The Hargrove, Sr. and Kelly Bess Moneyhun Bowles Fund was established in 1983 by John Bowles, Hargrove Bowles, Jr., R. Kelly Bowles, and James Bowles in memory of their parents. Income from the fund is for scholarship assistance in the Divinity School.

The M. M. Brabham Scholarship and Loan Fund was established in 1982 by Sara K. Brabham in memory of her father, the Reverend Matthew Moyer Brabham; her mother, Fannie Cannon Brabham; and her sisters, Maud Brabham and Mary Moyer Brabham. The fund is administered on behalf of St. Paul United Methodist Church, Ninety-six, South Carolina.

The Fred W. Bradshaw Fund was established in 1975 through a bequest from Fred W. Bradshaw of Charlotte, North Carolina, to be utilized for the enrichment of the educational program of the Divinity School, especially to support distinguished visiting scholars and outstanding students.

The Emma McAfee Cannon Scholarship was established in 1969 by Bishop William R. Cannon in memory of his mother, Emma McAfee Cannon, and is designated to assist students from the North Carolina Annual Conference of the United Methodist Church who are studying for the pastoral ministry and planning to serve in the North Carolina Conference.

The Kenneth Willis Clark Lectureship Fund was established in 1984 by Mrs. Adelaide Dickinson Clark in memory of her husband, Kenneth W. Clark, professor of New Testament in the Divinity School, 1931-67. The fund provides for distinguished lectureships in New Testament studies and textual criticism.

The James T. Cleland Endowment Fund was established by friends and students of James T. Cleland to create a Chair of Preaching in his honor. He was Dean of the Duke University Chapel from 1955 to 1973 and professor of preaching in the Divinity School.

The E. M. Cole Fund was established in 1920 by Eugene M. Cole, a United Methodist layman of Charlotte, North Carolina to support the education of ministers.

The Lela H. Coltrane Scholarship was established in 1980 by Mrs. David S. Coltrane of Raleigh, North Carolina, and friends of Mrs. Coltrane, to encourage excellence in ministry.

The Robert Earl Cushman Endowment Fund was established in 1980 to create a professorship in honor of Robert Earl Cushman, research professor of systematic theology and Dean of the Divinity School, 1958-71.

The Dickson Foundation Awards were established by the Dickson Foundation of Mount Holly, North Carolina, to provide assistance to students who demonstrate financial need and superior ability. Preference is given to children of employees of American and Efird Mills and its subsidiaries; to residents of Gaston, Caldwell, and Catawba Counties; and to North Carolinians.

The Duke Endowment, established in 1924, provides under the Maintenance and Operation Program, field education grants for students of the Divinity School who serve in rural United Methodist churches under the Endowment and Field Education Program.

The Henry C. Duncan Fund was established in 1982 by the men of the Village Chapel, Pinehurst, North Carolina, to honor their pastor, Chaplain Henry C. Duncan, a member of the Divinity School Class of 1949. Income from the fund is used for scholarships.

The N. Edward Edgerton Fund was established in 1939 by N. Edward Edgerton, Trinity College Class of 1921, of Raleigh, North Carolina, for the support of ministerial education.

The Will Ervin Scholarship Fund is an endowment established by Will Ervin in 1980 and administered by the Richlands United Methodist Church, Richlands, North Carolina, for students preparing for Christian ministry.

The George D. Finch Scholarship Fund was established in 1972 by George David Finch, Trinity College Class of 1924, of Thomasville, North Carolina for the support of ministerial education.

The W. Kenneth and Martha O. Goodson Fund was established in 1981 to honor Bishop Goodson, Divinity School Class of 1937 and retired Bishop of the United Methodist Church, and Mrs. Goodson. The fund was doubled in 1985 by a major gift for scholarships and parish ministry support from Bishop and Mrs. Goodson.

The James A. Gray Fund was presented to the Divinity School in 1947 by James A. Gray of Winston-Salem, North Carolina, for use in expanding and maintaining its educational services.

The Ned and Carmen Haggar Scholarship Fund was established in 1985 by Carmen Haggar of Pinehurst, North Carolina, through her son, Alexander J. Haggar, to support theological education at Duke.

The P. Huber Hanes Scholarship was established by the late P. Huber Hanes of Winston-Salem, North Carolina, Trinity College Class of 1900, as a scholarship fund for Duke University, a portion of which is used to provide financial assistance for Divinity School students.

The Richard R. Hanner, Jr. Scholarship was established in 1973 by friends of the late Richard R. Hanner, Jr., Trinity College Class of 1953, to support advanced work in Christian education.

The Russell S. and Julia G. Harrison Scholarship Fund was established in 1980 by Russell S. Harrison, Divinity School Class of 1934, and his wife, Julia G. Harrison. The fund supports persons from the North Carolina Conference of the United Methodist Church preparing for ordained ministry as local church pastors.

The Margaret Blount Harvey Fund was established in 1982 by C. Felix Harvey and Margaret Blount Harvey, Trinity College Class of 1943, of Kinston, North Carolina, to provide scholarship assistance for students preparing for parish ministry.

The Hebrew Evangelization Society Scholarship is a grant from the Hebrew Evangelization Society, Inc., founded in 1931 by Dr. A. U. Michelson, which provides two full-tuition scholarships each year.

The Franklin Simpson Hickman Memorial Fund was established in 1966 by Mrs. Vera Castell Hickman in memory of her husband, Franklin S. Hickman, who served as professor of the psychology of religion, the Dean of the Chapel of Duke University, and the first preacher to the University. The fund income supports a regular visiting lecturer in preaching and provides financial aid to students who wish to specialize in the psychology of religion.

The George M. Ivey Scholarship Fund was established in 1948 by a gift of George M. Ivey, Trinity College Class of 1920, of Charlotte, North Carolina for the support of ministerial education.

The George Washington Ivey Professorship, with initial funding by the Western North Carolina Conference of the United Methodist Church and later funding by George M. Ivey, George M. Ivey, Jr., Leon Ivey, and the Ivey Trust, is the oldest named professorship in the Divinity School.

The Jameson Jones Memorial Fund was established in 1982 by a bequest and memorial gifts following the untimely death of Jameson Jones, Dean of the Divinity School, 1981-82. The fund provides for the enrichment of programs and study opportunities.

The Charles E. Jordan Scholarship Fund was established in 1969 by the family of Charles E. Jordan, former Vice-President of Duke University to support the education of ministers.

The Amos Ragan Kearns Professorship was established in 1970 by a gift from the late Amos Ragan Kearns of High Point, North Carolina for a Chair in Religion.

The Lewis Clarence Kerner Scholarship was established in 1959 by Beatrice Kerner Reavis of Henderson, North Carolina, in memory of her brother and designated for the assistance of native or foreign-born students preparing for service in world Christian mission.

The Carl H. and Mary E. King Memorial Fund was established in 1976 by family and friends of Carl and Mary King, distinguished church leaders in Western North Carolina Methodism, to support students preparing for educational ministry in the parish.

The John Haden Lane Memorial Scholarship was established in 1968 by the family of John H. Lane to provide support for education in Christian ministry including chaplaincy and other specialized work.

The Thomas A. and Ann Marie Langford Fund was established in 1981 in honor of Dr. Thomas A. Langford, Dean of the Divinity School, 1971-81, and Mrs. Langford.

The Laurinburg Christian Education Fund was established in 1948 by members of the First United Methodist Church, Laurinburg, North Carolina, for ministerial education.

The John Joseph Lewis Fund was established in 1982 by Colonel Marion Smith Lewis, Trinity College Class of 1916, of Charleston, South Carolina to honor his father, a circuit riding Methodist preacher. The fund income provides scholarship support.

The D. M. Litaker Scholarship was originally established by Charles H. Litaker in 1946 in honor of his father, Dr. D. M. Litaker, Trinity College Class of 1890, and was specified for the Divinity School in 1977 by the Litaker family. The income is for support of persons preparing for ministry in the Western North Carolina Annual Conference of the United Methodist Church.

The Calvin M. Little Scholarship Fund was established in 1985 by the members of the First United Methodist Church, Mt. Gilead, North Carolina, to commemorate a generous bequest from Mr. Little and to affirm the important relationships between the church and the Divinity School.

The Robert B. and Mary Alice Massey Endowment Fund was established in 1980 by Mr. and Mrs. Massey of Jacksonville, Florida, for the support of excellence in ministry.

The Robert McCormack Scholarship was established by the Trustees of the Duke Endowment to honor Robert McCormack, Chairman of the Board of the Duke Endowment at the time of his death in 1982.

The C. Graham and Gradie Ellen E. Mitchum Fund was established in 1985 by Dr. and Mrs. Kenneth E. Mitchum of Pittsboro, North Carolina, in memory of his



father, a lay preacher, and in honor of his mother. The fund provides scholarships for students who have significant financial needs and a strong commitment for ministry in the local church.

The Myers Park Scholarship Fund was established in 1948 by members of the Myers Park United Methodist Church, Charlotte, North Carolina for ministerial education.

The W. Fletcher Nelson Scholarship was established in 1980 by friends of W. Fletcher Nelson, Duke Divinity School Class of 1930, of Morganton, North Carolina. He was responsible for the fund-raising efforts which enabled renovations and the building of the new wing of the Divinity School.

The W. R. Odell Scholarship was established in 1946 by the Forest Hills United Methodist Church, Concord, North Carolina to honor Mr. Odell, a distinguished layman.

The Parish Ministry Fund was established in 1968 to provide continuing education opportunities for selected parish ministers and lay leaders from the Western North Carolina Conference of the United Methodist Church. The fund sponsors seminars, short study courses, and makes special grants for full-time study leaves. The program is administered by the Divinity School with the assistance of the Parish Ministry Fund's Board of Directors.

The Emma Leah Watson and George W. Perrett Scholarship was established in 1984 by Mrs. Perrett of Greensboro, North Carolina, to provide scholarships for students preparing for the ministry in the local church.

The Cornelius Miller and Emma Watts Pickens Memorial was initiated in 1966 by the Pickens brothers to honor their parents. The fund income helps to support the Divinity School Media Center.

The William Kellon Quick Endowment for Studies in Methodism and the Wesleyan Tradition was established in 1985 by Mr. and Mrs. Stanley S. Kresge of Pontiac, Michigan, to support teaching, research, and publication in Methodist studies and to honor their pastor, William K. Quick, Divinity School Class of 1958.

The Gilbert T. Rowe Memorial Scholarship Fund was established in 1960 through the generosity of alumni and friends of the Divinity School to honor the memory of Dr. Rowe, professor of systematic theology.

The Elbert Russell Scholarship was established in 1942 by the Alumni Association of the Divinity School in honor of Dr. Russell, professor of Biblical theology and Dean of the Divinity School, 1928-1941.

The John W. Shackford Endowment Fund was established in 1985 by Margaret S. Turbyfill, Trinity College Class of 1940, of Newport News, Virginia, to provide student scholarships in memory of her father, John W. Shackford, who was a leader in religious education with the former Methodist Episcopal Church, South.

The Gaston Elvin Small Family Fund was established in 1984 by Gaston E. Small, Jr. of Elizabeth City, North Carolina. As an unrestricted endowment, the fund honors the Small family and their strong ties with Duke University, the Divinity School, and the United Methodist Church.

The Dolly L. Spence Memorial Scholarship Fund was established in 1984 by Royall H. Spence, Sr. of Greensboro, North Carolina, in memory of his wife and to provide financial support for ministerial students.

The Hersey E. and Bessie Spence Fund was established in 1973 by a gift from the estate of Hersey E. and Bessie Spence and designated to establish a Chair in Christian Education.

The Hersey E. Spence Scholarship was established in 1947 by the Steele Street United Methodist Church of Sanford, North Carolina, in honor of their former pastor and late professor in the Divinity School.

The David Johnson and Mary Woodson Sprott Fund was established in 1982 by the Sprott family of Winter Park, Florida with appreciation for Duke-educated ministers and to provide student scholarships.

The Earl McCrary Thompson Scholarship was established in 1974 in honor of the late Earl McCrary Thompson, Trinity College Class of 1919 to support education for ministry.

The Wilson O. and Margaret L. Weldon Fund was established in 1983 by a friend to honor Dr. Weldon, Divinity School Class of 1934 and trustee-emeritus of Duke University, and Mrs. Weldon. Income from the fund is for student scholarships.

The A. Morris and Annabel Williams Fund for Parish Ministry was established in 1983 by Mr. and Mrs. A. Morris Williams, Jr., of Villanova, Pennsylvania, both graduates of Duke University. This fund honors A. Morris Williams, Divinity School Class of 1932, and the late Mrs. Williams. Income from the fund is designated for scholarships, continuing education, and creative program support for persons committed to Christian ministry through the local church.

The United Methodist Church makes a substantial contribution to the Divinity School by designating a percentage of its Ministerial Education Fund and World Service Offerings for theological education. The general Board of Higher Education and Ministry makes available annually two national United Methodist scholarships.

The Dempster Graduate Fellowships are awarded annually by the United Methodist Board of Higher Education and Ministry for graduates of United Methodist theological schools who are engaged in programs of study leading to the Ph.D. degree in religion. A number of Divinity School graduates have held these fellowships.

Field Education



A Ministerial Development Program

As the clinical dimension of theological education, field learning is designed to: (1) help students develop vocational identity as ministers by providing experience with a variety of ministry tasks; (2) provide a ground for the testing and reconstruction of theological concepts; (3) develop the ability to do critical and reflective thinking by relating theory and experience; (4) help students develop ministry skills to achieve an acceptable level of professional competence; (5) integrate academic studies, personal experiences, and critical reflection into a personal spiritual foundation that produces a confident and effective ministry.

Field Education Credit Requirements

Two units of approved field education placement are required for graduation in the Master of Divinity degree program; and one unit is required for the Masters of Religious Education program. A unit is defined by one term placement, either a summer term of ten weeks or twelve weeks or a winter term of thirty weeks at fifteen hours per week. To be approved, the field setting must provide ministerial identity and role, distinct ministerial tasks, qualified supervision, a service-learning covenant, regular supervision conferences, and effective evaluation. Each unit also requires completion of the appropriate field education seminar concurrent with or immediately following the field placement.

The seminar required for each unit of credit will include case material prepared by the student and critical reflection by the student upon the nature and task of ministry as it is experienced in an approved field setting. Seminars will be led by faculty and ministers. The field seminars must be taken in sequence: FE I, Ministerial Development Seminar, must be *completed* before the completion of twelve courses and is prerequisite to FE II, Ministerial Practice Seminar, taken after the completion of sixteen courses. One unit of Clinical Pastoral Education (CPE) may be substituted for the field and seminar components of FE I. CPE may be used for the field component *only* for FE II, i.e., all students must take the FE II seminar.

To qualify for credit the student must apply and be approved for a credited placement, develop and complete a learning covenant with acceptable quality of work, cooperate with the supervisor, participate in the assigned seminar, and prepare an evaluation of the experience. Evaluation and grading will be done by the field supervisor, student, and seminar leader.



Administering Ministerial Development

Development of ministerial competency is the responsibility of each student. If the Field Education staff questions a student's readiness for a field assignment, a committee consisting of the student's faculty adviser, a member of the Field Education Committee, and the Field Education staff will assess the student. Divinity School admission materials, evaluation by the Field Education staff, and if necessary, additional professional evaluation will be used. This committee will approve the field assignment, or refer the student to remedial avenues of personal and professional development, including, if necessary, a leave of absence or withdrawal from school. Such action will be referred to the Academic Standing Committee for inclusion in assessment of that student's progress towards graduation. When, for whatever reason, a student's evaluation from a field setting raises questions about the student's ministerial learning and/or growth, or that person's use of the setting for those purposes, the same committee will be convened to assess the student and the experience and to make appropriate recommendations to the Academic Standing Committee.

Field Settings for Ministry Development

Field placements are usually made in settings that have been developed and approved by the Divinity School. They offer opportunities for ministerial service with supervision, pastoral identity, and evaluation.

A wide variety of ministry settings is available for varying student goals: parish settings (rural, suburban, urban, larger parish patterns, and staff team ministries); institutional settings (mental health institutions, prisons, mental retardation centers, and retirement homes); campus ministry settings (positions on the campuses of a variety of schools as well as internships in college teaching).

While the Divinity School offers this rich diversity of settings for personal and ministerial development, the large majority of assignments fall in local churches in small communities. Because of the Divinity School's ties with the United Methodist Church, most field placements occur in that tradition. However, the Divinity School will do everything possible to see that each student completes at least one assignment in his or her own denominational tradition. Each student is required to complete one credit in a local church setting, unless permitted by the Field Education Committee to do otherwise.

Internship Program

An internship assignment embraces both a full-time salaried position and a learning commitment in a single context over a period of time ranging from nine to twelve months. These assignments are designed to engage the student in considerable depth in particular ministry skills in a setting relevant to specific vocational goals. Internships must encompass an advanced level of specialized field experience which is more complex and extensive in its serving and learning potential than the basic field education short-term placement. The internship may be individually designed to meet the needs and interests of the student, provided that the plan includes a student learning covenant, an agency service contract, approved supervisory standards, an investigation-research project acceptable to the assigned faculty adviser, and participation in either a colleague group or seminar. When these components are satisfactorily met and the evaluation reports are filed, credit for up to two courses (six semester hours) may be assigned for the internship. No additional academic credit may be accumulated during the intern year. Grading for the two course credits will be on a pass/fail basis.

Internship settings may be student-initiated or negotiated by the school. In either case an agency contract covering all agreements must be made and filed with the Field

Education Office. Types of settings occasionally available for internship placement include: campus ministry and college chaplaincy positions; parish ministry positions—such as associate pastor, parish director of education; institutional positions; and a world mission internship of one to three years of national or overseas service. Other internships in the church or in specialized ministries in the secular world may be planned in consultation with the Field Education staff.

To be eligible to register for an internship, the student must have completed at least one-half of his or her degree program and be registered as a student in good standing in the Divinity School. Application forms and processing for internships will be done through the Office of Field Education.

Students Serving As Pastors

Students frequently serve as pastors of churches, or part-time associates, during the period of their study in the Divinity School. These appointments are made by the appropriate denominational official or body. The Divinity School recognizes this arrangement and recommends that the student consult with the Office for Field Education, as agent of the Dean, before accepting an appointment as pastor or associate pastor.

The Office of Field Education cannot make these appointments. This is within the jurisdiction of denominational authorities, and students should initiate their own arrangements. The Office of Field Education, however, requires a student application for appointment prior to accepting one. The office also provides area church officials with recommendations for students.

Students who serve in these capacities ordinarily may enroll in no more than three courses per semester, thus requiring eight semesters to complete the Master of Divinity degree. Student pastors are not permitted to enroll in summer study of any kind. Relaxation of this regulation requires the permission (on the appropriate form) of the supervising church official, the Field Education staff, and the Associate Dean for Curricular Affairs. Students are strongly and actively discouraged from attempting to commute more than fifty miles one way on a daily basis. Extensive commuting will jeopardize the student's academic program, health, ministry, and family life.

In keeping with the goal of the school to develop professional competence in ministry, students should use their pastoral appointments as learning contexts for field education programs initiated by the school. Special seminars and reflection groups are arranged in consultation with students to advance their professional growth and guide the pastor's learning activity in the parish. Periodic evaluation will be expected in the pastor's parish, if all the conditions outlined for credit are met, and all reports are completed and filed at the appropriate time. If, however, the parish setting proves inadequate for the student's needs for ministerial growth and development, the Field Education staff will convene a review committee consisting of the student's faculty advisor, a member of the Field Education Committee and the Field Education staff to review the student's needs and take appropriate action to assist the student in growth. Examples of such action are: requiring an alternative field experience, or a basic unit of Clinical Pastoral Education, psychological evaluation, personal therapy, etc.

Field Education Seminars

The two field education units of credit required for the Master of Divinity degree may be earned by approved field placement and participation in the seminars listed below. FE I is prerequisite to FE II. *Seminars must be concurrent with, or must immediately follow, involvement in the approved field setting.* Pastors are especially grouped for FE I and meet one hour weekly over the first two semesters of study.

FE I. Ministerial Development Seminar. Through the use of case material, critical reflection upon the nature and task of ministry as experienced in a field context, with special emphasis upon vocational development and ministerial role. Must be taken before the completion of twelve courses. Two hours a week. *Faculty or professional ministerial leadership.*

FE II. Ministerial Practice Seminar. Case studies to develop competence in church administration, preaching and worship, pastoral care and counseling, and religious nurture and teaching. Must be taken after the completion of sixteen courses. Two hours a week. *Faculty and staff leadership*

Registration for these seminars should be done through the Registrar's office at the normal registration time. Since no semester-hour credit values are assigned to these seminars, there will be no tuition charge for them. A quarter of Clinical Pastoral Education (CPE) completed in an approved setting may be substituted for both approved field placement and Field Education Seminar I, but students who choose CPE for their Field Education II requirement will be required to take the FE II seminar.

International Programs



A Global Perspective for Duke Divinity School

"It is my hope that Duke will become even better known for its international programs. Indeed, Duke's history, resources, and outstanding faculty suggest to me that it has become our solemn obligation to serve the world community, just as it once was our duty to serve the South."

President H. Keith H. Brodie, inaugural address, September 28, 1985

When Dennis M. Campbell became Dean of the Divinity School in 1983, his first administrative addition was a Committee on International Studies and Programs. "I believe," he wrote, "that the future of theological education must be seen in a global perspective and that persons preparing for ministry must encounter the reality of Christianity in the context of our whole world."

Since that time, there has been a gradual expansion of opportunities for study or travel abroad, a slow but steady growth in the number of international students in the Divinity School, and an increase in faculty participation in programs outside of the United States. Some of these are listed below. The faculty and administration of the Divinity School stand ready and eager to assist with any proposals for a broadening of theological studies in the international realm.

The Home Country. Duke Divinity School continues to attract students from other countries who make a significant contribution to the community. In both 1984-85 and 1985-86 we could boast of eight international students representing six different countries. Because of financial limitations and the maturation of higher theological institutions in other parts of the world, a majority of these students come for a shorter period of time and for advanced degrees.

Under the leadership of Professor Geoffrey Wainwright, the Lecture Program Committee brings a succession of distinguished scholars and church leaders to speak in the Divinity School. Among these, since 1983, have been the following:

Fall, 1984

The Reverend A. Raymond George, former President of the British Methodist Conference.

Father Gustavo Gutierrez, Lima, Peru.

Professor D. J. Smit, Professor of Theology, University of Western Cape, South Africa.

Dr. Walter Klaiber, Dean, United Methodist Seminary, Reutlingen, West Germany.

Dr. T. J. Mafico, Zimbabwe, Department of Religious Studies, Classics and Philosophy, University of Zimbabwe.

Spring, 1985

Professor Hugh Anderson, Professor of New Testament, New College, University of Edinburgh, Scotland (first Kenneth Clark Lecturer).

Dr. Kenneth Surin, College of St. Paul and St. Mary, Cheltenham, England.

Dr. John Henley, Dean, Melbourne College of Divinity, Australia.

Fall, 1985

Professor R. Neville Richardson, Department of Religious Studies, University of Natal, South Africa.

The Reverend Helmut Nausner, Superintendent, United Methodist Church, Austria.

Sister Henry Keane, Department of Systematic Theology and Theological Ethics, University of South Africa.

Dr. Robert Morgan, New Testament, Oxford University.

Spring, 1986

Dr. David Lin, Fujian Teachers' University, China.

In addition to courses in world Christianity (including the "Christian World Mission," "Third World Theology," and "Dialogue with Other Faiths"), and courses in the history of religion under the graduate program, various other departments offer courses related to international studies: "War in the Christian Tradition," "Ethics in World Religions," "Marxist Ideology and Christian Faith," "Food and Hunger," among others. Professors Geoffrey Wainwright from Great Britain and Teresa Berger from Germany add an international and ecumenical flavor to the faculty.

Travel Seminars. For a number of years, under the supervision of the Center for Continuing Education, faculty members have led travel seminars to study the role of the Christian church in significant areas of social and cultural development. Each year Professor McMurry Richey (retired 1984) conducts groups of seminary students, faculty, and ministers to Mexico, generally during the spring recess. In alternate years (most recently in 1985) Professor Creighton Lacy has led a group to visit historic sites and the resurgent church in the People's Republic of China. In 1985 Professor Moody Smith conducted a seminar to "Cities of the First Christians: Athens, Corinth, Ephesus, Rome"; and other faculty members have led tours on their own initiative. Similar opportunities will be continued, and in some cases, the Center for Continuing Education has been able to provide limited financial assistance. As one example of a recent experience, three Duke students were selected by the United Methodist Council of Bishops and the Board of Global Ministries to participate in an interseminary visit to mission, refugee, and development projects in Kenya, Pakistan, and India.

Study Abroad. At the present time the only regular, on-going program of study abroad is an exchange with the University of Bonn, West Germany. Each year one German student is enrolled for a year at Duke, while an American student is selected to study in Bonn. This program, carried on for many years under the direction of Professor Frederick Herzog, has been augmented by faculty seminars: in Germany in May, 1983 on the theme of "Luther's Understanding of Human Nature and Its Significance for Contemporary Theology," with a follow-up at Duke in March, 1985, focusing on North American anthropology and Reinhold Niebuhr.

Duke University is one of the supporting members of the American Schools of Oriental Research. Accordingly, students and faculty in the Divinity School have the privilege of attending the Albright Institute of Oriental Research in Jerusalem, the American Center of Oriental Research in Amman, and other similar institutions without charge for tuition. They may also compete for the four fellowships offered annually by the schools.

Individual students from time to time have made private arrangements for study abroad. These have most often taken place in England or Scotland, with academic credit usually transferrable toward the Duke degree. Other invitations have been extended from such widely-scattered institutions as Wesley College, Bristol, England; Trinity Theological College, Singapore; United Theological College, Bangalore, South India; and the School of Theology, Sao Paulo, Brazil. The International Studies Committee will assist with contacts and information for individual proposals.

Foreign Service. The involvement of Duke Divinity School with international institutions and cultures has always gone beyond one-way educational opportunities. Over the years faculty, alumni, and students have lived and worked in locations abroad, under both ecclesiastical and secular auspices. The latest listings include approximately a score of seminary graduates in ministry overseas, and an equal number of other Duke alumni, largely from the Ph.D. program in religion, who are serving in church-related posts. Nearly forty foreign students have departed to their own—or other—countries to carry on Christian ministry.

In cooperation with St. Michael's Parish, Dumfries, Scotland, the Divinity School offers an academic year's experience. A modest stipend provides basic support and trans-Atlantic air fare. This opportunity is open each year to one rising senior who serves as a full-time parish assistant for this parish of the Church of Scotland.

Divinity students often participate in international service projects on a short-term basis. Several have taken part in evangelistic or building work-teams, chiefly in the Caribbean area. At least one recently spent a summer in Japan holding youth services under the auspices of OMS International. Faculty, too, are engaged in a variety of activities outside the United States. In addition to innumerable conferences and lectures in Canada and Europe, professors have taught and given papers in Third World countries: e.g., Professors Lacy, Shockley, and Via at the University of Zimbabwe; Professor Langford in Singapore; Professor Westerhoff in Japan, Australia, Argentina, Peru, and other countries of Central and South America; and Professor Wainwright in Australia and New Zealand.

Our World Parish. "The world is my parish," said John Wesley, referring to various classes and social groups in his own country as well as the foreign mission field. Today that "foreign mission field" has become an international Christian community with much to share. Today there are fewer North American missionaries serving in other countries or in ethnic minority parishes, though there is still a need for fellowship and support. In a wider sense "the world is my parish" for every Christian minister and lay person. Duke Divinity School seeks to broaden that awareness through its wide range of international studies and programs.

Black Church Affairs



The Office of Black Church Affairs

The Office of Black Church Affairs has two principal objectives: (1) to assist black and other minority students in deriving the greatest possible value from theological education; and (2) to call the entire Divinity School community to serious and realistic dialogue with the black community. In keeping with these objectives, the Office of Black Church Affairs provides the following programs, activities, and services:

Academic Study. American theological education has long ignored the contributions of the black religious experience, a circumstance which the Divinity School curriculum addresses through (1) black-oriented course offerings in the core curriculum and (2) the integration of black material in the content of all other courses.

Preaching and Lecture Series. Fall and spring preaching and lecture series provide frequent opportunities to hear outstanding black preachers in Divinity School classes and worship services. The Gardner C. Taylor Preaching Series brings outstanding black preachers to the campus.

The Martin Luther King, Jr. Lecture Series brings to the Divinity School community lecturers of national stature to address the issues of justice, peace, and liberation in relation to the insights of the gospel and the black religious experience.

Continuing Education. In cooperation with the Center for Continuing Education, the Office of Black Church Affairs provides several programs for black pastors in the region, including the Gardner C. Taylor Black Preaching Series, the Martin Luther King, Jr. Lecture Series, and seminars on black concerns and issues. Occasional conferences, colloquies, symposia, and the Annual Convocation and Pastors' School supplement these offerings.

Opportunities for academic study also abound for all qualified black pastors and lay persons. The extensive holdings of the Divinity School Library and the services of the Henry Harrison Jordan Loan Library are also available upon application to the librarian of the Divinity School.

Church Relationships. Through the Office of Black Church Affairs the Divinity School reaches out to the black churches in the Durham-Raleigh vicinity. Such relationships not only afford excellent field settings for ministerial study and work, but they also provide a laboratory in which both blacks and whites together can gain wider knowledge of, deeper appreciation for, and increased sensitivity to the issues and urgencies of black culture.

The Office of Black Church Affairs also acts as a liaison with several clergy and community groups including the Interdenominational Ministerial Alliance and the Durham Ministerial Association.



The Office of Black Church Affairs provides counsel and advice to prospective black seminarians in undergraduate schools and encourages inquiries concerning study opportunities available at Duke Divinity School. For further information, contact Grant S. Shockley, Office of the Director of Black Church Affairs, Duke Divinity School, Durham, North Carolina 27706.



Continuing Education



The Center for Continuing Education

Through the Center for Continuing Education the Divinity School offers extensive opportunities in education for ministry. The Charles P. Bowles Continuing Education Center in the new wing of the Divinity School includes seminar rooms and spacious study carrels for ministers involved in individual study or residential seminars. The Divinity School provides a year-round program of residential seminars and conferences, extension seminars and consultations, and special services to ministers and churches throughout the nation.

Admission and Scholarships

Conferences, churches, and other supporting groups and institutions have made available through the Divinity School designated funds to assist in continuing education for ministry. Inquiries, applications for admission, and requests for continuing education scholarships for residential seminars should be directed to: The Reverend W. Joseph Mann, Director of Continuing Education, Duke Divinity School, Duke Station, Durham, North Carolina 27706 (919)684-3041.

In-Residence Seminars and Conferences

During the academic year 1985-86 the Divinity School conducted a series of continuing education seminars, workshops, and conferences for clergy. Some of these were: "Duke Reading Week"; "Theological Foundations for Ministry"; and "Spiritual Formation and Christian Leadership". In addition, special seminars were presented for many districts from the Western North Carolina Conference and the North Carolina Conference of the United Methodist Church. Current seminar schedules can be obtained through the Director of Continuing Education.

International Travel-Study Seminars

The Center for Continuing Education sponsored three international travel-study seminars in 1986. "An Introduction to Mexico" was led by Professor McMurray Richey; and "Cities of the First Christians" (cosponsored with the Alumni Association) was led by Professor Moody Smith. These seminars offer clergy international travel and excellent continuing education opportunities.

Duke Fellows Program

For some time now the Divinity School has had two programs for study leave time for ministers. The Benjamin N. Duke Fellows Program, funded by the Rural



Church Office of the Duke Endowment, and the Parish Ministry Fund Fellows Program, funded by the Parish Ministry Fund of the Divinity School, gives ministers the opportunity for full-time, independent study for three months at the Divinity School. The Benjamin N. Duke Fellows Program is designed for pastors serving rural United Methodist churches in North Carolina. The Duke Fellows Program is comprised of these two fellows programs.

The Duke Fellows Program is open to any minister who has had at least five years of ministerial service. All candidates will submit a proposal describing how he or she will spend the study leave time. The Director of Continuing Education is ready to consult with candidates as to what a course of study might look like. Fellows are expected to be fully released from their pastoral responsibilities and to be in residence at the Divinity School.

The fellow is assigned a carrel and is expected to do independent study. Fellows will join in a fellows' seminar which will meet weekly and give each fellow an opportunity to share what he or she is working on and to engage in conversation about mutual interests and concerns. The fellow will meet regularly with the Director of Continuing Education to give direction and aid to the study leave. In short, the Duke Fellows Program will give the fellow both independent study as well as community and support for that study.

The Director of Continuing Education, Joseph Mann, will also be glad to help you gain the support you need from your local church and assist you as you think about who will serve your parish while you are away. Duke fellows receive a stipend of \$5,000.

Visiting Scholars Program

The Center for Continuing Education provides carrel space and library privileges for scholars who wish to spend an extended time at Duke while on sabbatical leave. Those interested in this program should contact the Director of Continuing Education.

The Convocation and Pastors' School

The annual Divinity School Convocation and North Carolina Pastors' School, a cooperative endeavor with the North Carolina and Western North Carolina Conferences of the United Methodist Church through the Board of Managers of the Pastors' School, brings together ministers, lay persons, students, and faculty for a series of lectures, sermons, and courses, along with alumni reunions and social occasions.

The James A. Gray Lectures. These annual lectures, established in 1950 as part of a bequest made in 1947 by James A. Gray of Winston-Salem, North Carolina, are delivered in the context of the Divinity School Convocation and North Carolina Pastors' School. The 1985 Gray Lecturer was John Deschner from Perkins School of Theology at Southern Methodist University.

The Franklin S. Hickman Lecture. This lectureship was established in 1966 as part of a bequest by Mrs. Franklin S. Hickman in memory of her late husband, Dr. Franklin Simpson Hickman, Professor of Psychology of Religion, Duke Divinity School, and Dean of the Chapel, Duke University. This lectureship enables the Divinity School to bring practicing ministers of extraordinary qualities to lecture and preach in the Convocation and Pastors' School and to participate in Divinity School classes, worship, and informal sessions with students and faculty. The 1985 Hickman lecturer was Dennis M. Campbell, Dean of Duke Divinity School.

Ministry in the Vicinity

Ministers and churches in the vicinity of Duke University are especially welcome to avail themselves of continuing education programs, facilities, and other services of the Divinity School and its faculty and students. They are invited to attend public lectures, visit with distinguished lecturers, participate in in-residence seminars and conferences, audit selected courses, study in the continuing education carrels, and use the resources of the Divinity School Library, the Henry Harrison Jordan Loan Library, and the tape recordings collection. Divinity School faculty, staff, and students are generally available for preaching, teaching, and other services in churches of the community and region.

Additional Study Opportunities



The J. M. Ormond Center for Research, Planning, and Development

This center was established in memory of the late Dr. J. M. Ormond, Professor of Practical Theology of the Duke Divinity School and Director of the Rural Church Program under the Duke Endowment, 1923–48. The North Carolina Annual Conference established the J. M. Ormond Fund in 1951 as part of the special effort of the North Carolina and the Western North Carolina Conferences of the United Methodist Church to provide additional programs at the Divinity School. The center is directed by Dr. Robert L. Wilson, Professor of Church and Society. It is jointly supported by the Ormond Fund and the Rural Church section of the Duke Endowment.

The center has three purposes. First, it assists the Church in its ministry by providing research and planning services. Second, it provides training for ministerial students in church and community studies. Third, it contributes through basic research to the understanding of the nature and functioning of the Church. Emphasis is given to research and planning studies of rural United Methodist Churches in North Carolina.

Programs in Pastoral Psychology

Programs in pastoral psychology beyond the studies incorporated in the M.Div. curriculum are provided in cooperation with the Duke University Medical Center and the Pastoral Care and Counseling Institute of Durham-Chapel Hill, Inc. Three such programs are available.

1. The Master of Theology degree with a major in pastoral psychology is ordinarily a calendar year program beginning the first full week in June. However, upon the recommendation of the staff, candidates with a quarter or more of Clinical Pastoral Education may begin their program in September. Candidates whose clinical work is with the Pastoral Care and Counseling Institute normally begin their program in September. The candidate may plan one of three programs or concentrations: (a.) a concentration in pastoral theology relating psychology and theological understanding to professional ministry, especially the parish, through course work and supervised field or clinical experience; (b.) a concentration in pastoral care and an introduction to the field of pastoral counseling through course work and an intern year in Clinical Pastoral Education; (c.) a concentration in pastoral counseling and pastoral psychotherapy through course work and clinical work with the Pastoral Care and Counseling Institute.



A quarter of Clinical Pastoral Education is considered a prerequisite for all programs. Students who wish to complete the intern year in CPE and earn a Master of Theology degree will normally need two years to complete the program.

In the context of clinical pastoral education various professional goals may be sought including general understanding and skills in pastoral care and specialization in pastoral counseling and clinical supervision. Persons specializing in pastoral counseling and pastoral psychotherapy will advance toward certification with the American Association of Pastoral Counselors and the American Association of Marriage and Family Therapists.

2. Single units of basic clinical pastoral education are offered each summer (beginning the first Monday in June and running for eleven weeks) and during the academic year extended over two semesters. When the unit is completed within one semester, the student may take two other courses in the regular M.Div. program. Should the unit be extended over two semesters, the student may take three other courses each semester. Two transfer course credits will be granted for a summer CPE quarter or two course credits will be granted for the unit taken during the academic year (unless a course credit has already been granted for PP 177, in which case only one additional credit will be given for the CPE unit).

Students in CPE may not have other field education appointments or employment. However, a CPE unit will, when satisfactorily completed, count as one field education unit if taken in relation to either Field Education Seminar I or II. Only one field education requirement may be fulfilled by CPE.

Students are reminded that ordinarily no more than five courses out of twenty-four for the M.Div. degree should be taken in any one subdivision.

3. A one-year certificate or nondegree internship program in clinical pastoral education is available through the Duke Medical Center for persons who hold the Master of Divinity degree or its equivalent. Also, students who wish to pursue a pregraduation intern year are invited to apply, provided they have completed at least one year of theological education. The certificate, nondegree intern year can be done at any level of clinical pastoral education (basic, advanced, supervisory) which the candidate and the supervisory staff judge appropriate. These persons may enroll in the Divinity School as special students for a course or two each semester. Such training usually provides four units of certified clinical pastoral education credit.

Admission to either the basic unit or the internship program of Clinical Pastoral Education is distinct from admission to the Divinity School. Applications for CPE enrollment are available in the Chaplains Service Office, Duke Medical Center.

For further information concerning any of these programs, write to Director, Programs in Pastoral Psychology, Duke Divinity School. See the section on the Master of Theology degree program.

The Ministerial Course of Study School

In cooperation with the Division of Ordained Ministry of the Board of Higher Education and Ministry and the Southeastern Jurisdictional Conference of the United Methodist Church, the Divinity School hosts the Course of Study School for local pastors of the United Methodist Church. This school is in session for four weeks each summer, and the required studies for one full year can be completed in this period. This is not a part of the regular work of the Divinity School degree program, and no credit toward a seminary degree can be earned. The faculty includes representatives from the Divinity School and other church-related institutions. The thirty-eighth session of the Course of Study School is being held 23 June-18 July 1986. For further information on the Course of Study School write to Dr. Paula E. Gilbert, Director, Ministerial Course of Study School, Duke Divinity School, Durham, North Carolina, 27706.

Curriculum



Degree Programs

The academic work of the Divinity School embraces three degree programs: the Master of Divinity degree (M.Div.) ordinarily of three academic years; a one-year program beyond the basic degree, the Master of Theology (Th.M.); and a third program of two academic years leading to the degree of Master of Religious Education (M.R.E.). All are graduate-professional degrees. Admission to candidacy for any of these three degrees presupposes the completion of the A.B. or its equivalent.

Students preparing for ordination to the Christian ministry and requiring appropriate graduate-professional education will enroll for the Master of Divinity degree. Students whose acquired academic standing, under this basic degree program, entitles them to further specialized study may advance their command of selected theological disciplines by applying for an additional year of studies leading to the Master of Theology degree. Together, these two degree programs constitute a sequence. Although the Master of Divinity degree fulfills requirements for ordination by prevailing ecclesiastical standards, the Th.M. program may assist in assuring a larger measure of professional preparation. Application for admission to the Th.M. program is open to graduates of other schools who have completed the basic theological degree.

The Master of Religious Education degree program is designed to prepare qualified persons, ordinarily not seeking ordination, for a ministry of Christian education in local churches or other organizations. The course of study is arranged to provide grounding in biblical, historical, and theological disciplines as essential background for instruction in and exercise of professional competence in curricular planning, teaching methods, and supervision of educational programs for various age groups.

The specific requirements for each of these degrees are found in the succeeding pages. Completed course work cannot be credited toward more than one degree. Reciprocal transfer of credit for course work taken under either the M.Div. or the M.R.E. program requires the permission of the Associate Dean for Curricular Affairs.

Doctoral Studies Accredited by the Graduate School

The Divinity School provides a substantial body of course offerings to an advanced level in biblical, historical, and systematic and contemporary theological disciplines that are accredited by the Graduate School and the faculty of the Divinity School, and lead to the Doctor of Philosophy degree. Sharing responsibility with the University Department of Religion for staffing and curricular provision of this course of study, the Divinity School is the principal contributor to the program of graduate studies in religion. However, since the Ph.D. in religion is certified and awarded

under the Graduate School, the doctoral student's admission and matriculation are administered under that division of Duke University.

With few exceptions, most courses in the *Bulletin of Duke University: The Divinity School* carrying a 200 number or above and belonging to the fields noted above are applicable to doctoral programs of study. These courses are open to qualified M.Div., Th.M., or M.R.E. students by permission of the instructor.

Qualified persons who desire to pursue studies leading to the degree of M.A. or Ph.D. in religion, under the administration of the Graduate School, are advised to apply to the Dean of that school. Inquiries concerning fellowships or specific requirements of the Program of Graduate Studies in Religion may be addressed to the Director, 209 Divinity School.

Administration of the Curriculum

Students are required at the time of each registration period to plan their course of study with the consultation and approval of their assigned faculty advisers. Such programs are subject to the review and approval of the Committee on Academic Standing, the Dean, and the Associate Dean for Curricular Affairs. It is the responsibility of each student to see that all requirements for graduation (and for ecclesiastical ordination) are met, and that any special permission granted to deviate from the normal program is properly recorded on the personal files in the registry.

Grading System. The Divinity School employs the grading scale with the following letters, *A, B, C, D*, and *F* which have been defined as follows: *A*, excellent; *B*, good; *C*, satisfactory; *D*, passing; *F*, failure; *WI*, withdrew illness; *W*, withdrew, discretion of the Dean; *I*, incomplete; *P*, passed; *NC*, noncredit; *Z*, year course. At the discretion of the instructor, individuals or classes may in certain instances be graded simply as pass or fail. Such *P/F* grades shall be limited to no more than 25 percent of a student's total curriculum at Duke and will not be figured in the grade point average.

The denotations are defined as follows according to quality points: *A*, 4; *A-*, 3.7; *B+*, 3.3; *B*, 3.0; *B-*, 2.7; *C+*, 2.3; *C*, 2.0; *C-*, 1.7.

Limited Program. Students whose work after admission is not satisfactory may be placed on limited programs by the Academic Standing Committee and are required to reduce their course loads or to make other academic adjustments. Students who during the first year of Divinity School maintain less than a *C* (2.0) average, including failures, ordinarily will be required to withdraw from the school.

Incompletes. A student may petition the Associate Dean for Curricular Affairs to receive a grade of incomplete in a course. This petition must be filed in writing on the prescribed form with the registry on or before the last official day of classes of the semester in question. Such permission may be granted when a student, through some circumstances beyond control, such as illness, has been hindered from meeting the course requirements. Adjudication of the petition will rest with the Associate Dean and the instructor concerned. The Associate Dean will communicate in writing to the student regarding the joint decision and any conditions attached thereto. An incomplete becomes an *F* unless it is removed through completion of assigned work by the following dates: for incompletes incurred in fall semester courses, 1 February; for incompletes incurred in spring semester courses, 15 September.

Change of Courses or Withdrawal. Students are permitted to change their course registrations, without incurring a penalty, during the prescribed drop/add period at the beginning of each semester. Any alteration in the number of courses must be officially reported and recorded. The adding of a course requires the permission of the instructor of that course as well as the student's faculty adviser. Any refund of tuition related to withdrawals will be according to the published schedule.

No student will be permitted to withdraw from a course after one-half of the semester without incurring failure, except for causes adjudged by the Associate Dean for Curricular Affairs to be beyond the student's control. Conditions of genuine emergency and not considerations of convenience will be determinative in considering requests, which must be submitted in writing on academic petition forms.

Leave of Absence. A student wishing to take a leave of absence for one or two semesters, and intending to return to a degree program in the Divinity School, should so notify the Associate Dean for Curricular Affairs in writing in advance. No leave of absence will be granted for more than one full academic year, although an emergency extension may be requested from the Associate Dean for Curricular Affairs.

Withdrawals from School. Students deciding to withdraw from the Divinity School, for whatever reason, should consult with their faculty advisers and the Associate Dean for Curricular Affairs, and must file a written statement of withdrawal prior to departure. All students who have officially withdrawn or whose leave of absence extends beyond one academic year but who wish later to return to the Divinity School will be required to reapply for admission, and provide whatever documentation is required by the Director of Admissions.

Directed Study. Students may, with permission of their faculty advisers and the instructors involved, take one or two units of Directed Study, preferably not in the same semester. These independent study courses under individual faculty supervision are ordinarily in subjects at an advanced level which cover material not available in the regular curriculum. Students wishing to take more than two courses by Directed Study must have permission from the Associate Dean for Curricular Affairs in consultation with the student's faculty adviser and the instructor who agrees to direct that study.

Cognate Courses. Students may, in consultation with their faculty advisers, take up to two graduate level courses in other departments of Duke University or at the University of North Carolina. Permission for more than two such cognate courses must be secured from the Associate Dean for Curricular Affairs. Courses in the Duke Department of Religion do not count within this limit.

Graduation with Distinction. Students who achieve a grade point average of 3.85 for overall academic records in the M.Div. and M.R.E. programs are granted the degree *summa cum laude*. Students with a grade point average of 3.65 or above are awarded their degrees, *magna cum laude*. Such distinction is calculated on the basis of letter grades only, totaling at least three-quarters of all courses taken at Duke, and will be indicated on the student's diploma.

Part-Time Students. Students taking less than three courses in any given semester are considered part-time students and are ineligible for financial aid from the school.

Auditors. Full-time students paying for at least three courses are permitted to audit additional courses, if space permits, with the approval of their advisers, the Associate Dean for Curricular Affairs, and the instructor of the class. Special students, part-time students, or persons not candidates for degrees in the University are charged an audit fee for each such course.

The Basic Theological Degree—Master of Divinity

The faculty of the Divinity School constantly endeavors to review the curriculum as a whole and to tailor individual courses to meet the needs of a rapidly changing world. Major curricular revisions were instituted in 1948, 1959, and 1967. The curric-

ulum is, therefore, not static but dynamic and is always subject to emendation by the faculty.

This degree program is structured to elicit a positive response to: (1) the challenge to provide an adequate professional education—education for ministry; (2) the needed variability of ministries in today's complex world; (3) the norms of university education; and (4) the Christian tradition.

Aims of the Curriculum. The aims of the basic degree program focus upon four goals, four areas of personal and curricular responsibility, four lifelong tasks which should be strongly advanced during the seminary years.

1. *The Christian Tradition.* To acquire a basic understanding of the biblical, historical, and theological heritage.
2. *Self-Understanding.* To progress in personal and professional maturity—personal identity, life-style as an instrument of ministry, major drives, handling of conflict, resources, and professional competency and so forth. This is to be coupled with a sensitivity to the world in which we minister—its social forces, its power structures, its potential for humanization and dehumanization.
3. *Thinking Theologically.* To have the ability to reflect about major theological and social issues and to define current issues in theological terms and theological issues in contemporary secular terms.
4. *Ministering-in-Context.* To have the ability to conceptualize and participate effectively in some form of contemporary ministry.

Goals of such scope cannot be neatly programmed in any curriculum, and the degree of achievement (in seminary and beyond) will vary with individuals and their own motives and incentives.

The Basic Curriculum—General Description. Graduation requirements for the Master of Divinity degree consist of satisfactory completion of twenty-four courses, including the eight basic courses or their equivalent, with an overall grade point average of C (2.0) or better, plus satisfactory completion of two units of approved field education with appropriate seminars.

The basic curriculum provides for foundational courses in biblical, historical, theological, and ministerial studies, representative of the tradition and regarded as indispensable background for subsequent elective work and individual program information. These required courses total eight of the twenty-four courses necessary for graduation. They are Old Testament 11, New Testament 18, Church History 13 and 14, American Christianity 28, Christian Theology 32, Christian Ethics 33, and Black Church Studies 124. The opportunity of advanced standing adds further variability to the academic program, depending upon the nature and quality of the student's undergraduate academic work. Sixteen courses, two-thirds of the required total, are available for working out an individualized program of studies leading to specialized preparation in academic depth and for purposes of professional ministerial competence.

Required courses may be staffed by one or more professors and are planned to treat subject matter both in scope and depth at the graduate level.

The formulation of the student's course of studies is guided by certain broad but normative recommendations for area distribution of courses and by the advice and counsel of appointed faculty advisers or authorized directors.

Students and advisers are directed to read diligently the paragraphs on elective studies and professional aims and distribution of elective studies in the section on administration of the curriculum.

All academic programs are subject to review and emendation by the Dean and the Associate Dean for Curricular Affairs for the fulfillment of the aims of the curriculum. The declared vocational and professional objective of the student is of central

importance both to the student and to the faculty adviser in planning the student's comprehensive study program.

Six semesters of residential study are ordinarily required for the completion of the degree. With permission of the Associate Dean for Curricular Affairs, certified nonresidential study, not exceeding the equivalent of eight courses, may be permitted to a candidate for the basic degree.

The normal academic load is four courses per semester. A student with demonstrated competence may, with the consent of the academic adviser and the Associate Dean for Curricular Affairs, enroll for an additional course in the middler and senior years.

General Features of the Basic Curriculum. The following is a brief summary of the basic curriculum.

1. Twenty-four courses and six or more semesters of residency are required for graduation.
2. Each student is required to complete two approved assignments in field education (with or without remuneration) under supervision. Such assignments might include an internship, a summer of full-time work, two semesters of part-time work, or involvement in church or community service. The essential criteria for graduation credits are that the amount and quality of supervision be approved by the Office of Field Education, and that the student be required to evaluate and correlate the experience directly.
3. A normal academic load is four courses with credit.

Admission to candidacy for the Master of Divinity degree is admission to the regular program of studies. The suggested paradigm defines the normal sequence of the student's developing program. Students enrolled for less than three courses are considered part-time and are not eligible for financial aid or student health services.

The curriculum intends to serve graduate-professional aims with maximum flexibility. Sixteen elective courses are available and may be programmed to satisfy vocational and professional preferences. In planning a course of study, the student, in consultation with the adviser, should choose a program which will give a broad understanding and appreciation of future professional responsibilities. Members of the faculty and staff welcome inquiries.

Professional ministries include those of the parish, preaching, teaching, and pastoral care; ministries of education in local churches and higher education; missions; campus ministry; specialized urban and rural ministries; chaplaincies—hospital, institutional, industrial, and military; teaching; religious journalism; audiovisual communications; church agencies; and ecumenical ministries at home and abroad. For many of these, further specialized training will necessarily be sought elsewhere beyond the basic degree. For all of these ministries the student's program of studies can be shaped for the particular ministry in view.

Students are encouraged to elect at least one course in each of the following areas or subdivisions of the curriculum beyond the required courses: American Christianity; history of religion; Christian education; world Christianity and ecumenics; biblical exegesis; pastoral psychology; Christian ethics; worship and preaching; care of the parish (including church and community). Such advanced courses should be selected with a view to the individual's vocational and professional aims and in consultation with the student's faculty adviser. Students are also encouraged to concentrate, usually in not more than five courses in any one subdivision of the curriculum, in an area directly related to their vocational and professional intention. The program of each student is subject to review and revision by action of the faculty adviser, the Committee on Academic Standing, the Associate Dean for Curricular Affairs, or the Dean.

A SUGGESTED CURRICULAR PARADIGM

Junior Year

Fall Semester

Old Testament 11
Church History 13
Elective
Elective

Spring Semester

New Testament 18
Church History 14
Elective
Elective

Middler Year

Fall Semester

Systematic Theology 32
American Christianity 28
Elective
Elective
Field Education Seminar I

Spring Semester

Christian Ethics 33
Black Church Studies 124
Elective
Elective

Senior Year

Fall Semester

Four elective courses
Field Education Seminar II

Spring Semester

Four elective courses

Student Pastors. Students in candidacy for the Master of Divinity degree who serve as full-time pastors or work more than fifteen hours per week in addition to their academic schedule are advised that their degree programs will usually require a fourth academic year. Modification of this schedule requires the approval of the Associate Dean for Curricular Affairs on recommendation of the Associate Dean for Field Education.

1. Students with pastoral charges or comparable extracurricular responsibilities ordinarily will enroll for not more than three courses.
2. Students who accept pastoral charges in their middler or senior year are required to have the prior approval of the Associate Dean for Field Education. Such students will be required to restrict their course work in accordance with regulation 1 above.
3. Modifications of these regulations will be scrupulously administered. Academic achievement, normally a *B* average, must be demonstrated before any modification of these requirements is allowed. Since adequate indication of the student's academic proficiency is not available before the completion of the first academic year, no modification of regulation 1 is possible for junior students.
4. Students who secure minor employment outside the channels of the Office of Field Education are required to inform the Associate Dean for Field Education. Students carrying an outside employment work load of more than fifteen hours per week will be required to limit their academic load.
5. Ordinarily a student may not commute more than fifty miles (one way). Students living farther away than this will be required to stay in Durham during the academic week.
6. Student assistant pastors (not pastors-in-charge) may enroll for a full academic load if they are not on limited program, if their work is under the supervision of the Associate Dean for Field Education, and if their field duties involve no more than fifteen hours per week.

Study Abroad. Study abroad, with transferable credit toward graduation, may be allowed for a candidate for the Master of Divinity degree by approval of the Asso-

ciate Dean for Curricular Affairs. A strong academic record is a prerequisite. Ordinarily, permission for such study may be granted to students who have completed the work of the middler year. Both the institution abroad and a specific course of study proposed must have the prior approval of the Associate Dean for Curricular Affairs. Required courses and the two field education units must usually be completed at Duke.

Transfer Credits. Transfer of credit to the Divinity School of Duke University, leading to candidacy for the degree of Master of Divinity, will normally be limited to one-third of the academic credits (in proportional evaluation) required for fulfillment of degree candidacy (see the chapter, "Admissions").

Advanced Placement. Students may, on the basis of undergraduate courses, a religion major, or other substantial preparation, be given advanced placement in one or more of the eight required subjects. Such placement normally presumes at least two college courses in a given area (e.g., Old Testament) with a satisfactory grade average.

Ordination Requirements. Students preparing for ordination are strongly advised to ascertain early in their seminary program the precise ordination requirements of their denomination.

United Methodist students must fulfill educational requirements in the *Discipline*, by completing the year-long course on Methodist doctrine, history, and polity (CP 159 and 160). Most annual conferences also require one or more courses in preaching and worship and/or clinical pastoral education.

Students from other denominations should consult with their appropriate church bodies for specific requirements, which may include biblical languages. Polity courses for certain other denominations may be offered from time to time by faculty members or local clergy on prior request.

Continuation Requirements. The following are the continuation requirements for students enrolled in the M.Div. degree program:

1. The student must maintain a cumulative grade point average of 2.0. If a student falls below this level he or she may be terminated or warned and placed on limited program. This means that the student may enroll in no more than three courses.
2. At the end of the second semester the student on limited program who does not attain a cumulative GPA of 2.0 is terminated. In exceptional cases a student who shows substantial improvement the second semester but does not quite attain a GPA of 2.0 may be given a third semester to do so.
3. The progress of all students is reviewed at the end of every semester by the Academic Standing Committee.

The M.Div degree must be completed within six years (twelve semesters). The minimum time in which a degree can be completed is three years (six semesters).

To be classified as full time, a student must be enrolled in three or more courses in a semester.

The Master of Religious Education Degree

The course of study leading to this degree is designed for persons desiring to prepare for leadership and service in the educational ministry of the church.

Admission. Applications for admission to the Master of Religious Education program are evaluated by the same standards as those applicable to the Master of Divinity degree, and admission requirements and procedures are also the same. Students planning to specialize in Christian education should study the sections of this bulletin

which contain statements of policy regarding the most appropriate prerequisite studies for theological education and the procedures to be followed in applying for admission.

Requirements. The Master of Religious Education degree usually requires two years, or four semesters, of residence and study and the fulfillment of the following requirements:

1. Sixteen courses, twelve of them limited electives and four free electives, selected by the candidate in consultation with the academic adviser.
2. One unit of supervised field education.
3. An overall grade point average of C (2.0) or better in those courses receiving letter grades.
4. A final comprehensive examination.

Program of Study for M.R.E. Degree

Limited electives	12
Four courses in Christian Education	
Two courses in the Biblical Division	
Two courses in the Historical Division	
Two courses in the Theological Division	
Two courses in the Ministerial Division (other than Christian Education)	
Free electives (which may include one cognate course in another department of the University)	<u>4</u>
	16
Final Comprehensive Examination	

Continuation Requirements. The following are the continuation requirements for the MRE degree program:

1. The student must maintain a cumulative grade point average of 2.0. If a student falls below that he or she may be given a second semester to bring the cumulative GPA up to 2.0. Failure to do so results in termination.
2. The progress of all students is reviewed at the end of every semester by the Academic Standing Committee.

The minimum time in which the MRE can be completed is two years (four semesters). The degree must be completed in four years (eight semesters).

To be classified as full time a student must be enrolled in three or more courses.

The Master of Theology Degree

The course of study leading to the degree of Master of Theology is designed for graduates of accredited theological schools who desire to continue or resume their theological education for enhancement of professional competence in selected areas of study. Enrollment in the Th.M. degree program is open to a limited number of students who have received the M.Div. (or the equivalent) with superior academic records.

Inquiries on admission may be addressed to the Assistant Dean of Admissions for referral to the Director of the Th.M. Program.

General Requirements. The general requirements for the degree of Master of Theology are:

1. Eight course units of advanced studies, with an average grade of B (3.0 average on a 4.0 scale).
2. Superior performance in a comprehensive examination covering the major area of study. As an alternative to the comprehensive examination the student may elect to do a research project in one major area if approved by the super-

vising professor. This project shall carry one course credit, to be counted within the eight units required.

3. Residence for one academic year or the equivalent. (Equivalency to be determined by the Associate Dean for Curricular Affairs).

There are no general language requirements. However, classical or modern languages may be required for certain programs (for example, in biblical studies, Hebrew or Greek may be required).

The Program of Study. At least four of the required eight courses must be taken in one of the basic divisions of study (biblical, historical, theological, or ministerial) which shall be designated as the candidate's major, and at least two courses in another of the divisions which shall be designated as the candidate's minor. Ordinarily, no more than two units may be taken through directed reading, and no more than one of these in any one semester. In the area of pastoral psychology, up to four course units may be taken through clinical pastoral education.

The comprehensive examination will be given at the close of the course of study for the degree, ordinarily in May or September.

The entire program of studies and comprehensive examination should be completed within twelve months. In some cases, the time limit may be extended, but in no case beyond three years.

The candidate majoring in pastoral psychology may plan one of three programs or concentrations: a concentration in pastoral theology relating psychology and theological understanding to professional ministry, especially the parish, through course work and supervised clinical or field experience; a concentration in pastoral care through course work and an intern year in basic or advanced clinical pastoral education; a concentration in pastoral counseling through course work and supervised counseling experience in a pastoral counseling center. In the context of clinical pastoral education various professional goals may be sought, including general understanding and skills in pastoral care. The Clinical Pastoral Education Program is certified by the Association for Clinical Pastoral Education. Persons specializing in pastoral counseling and pastoral psychotherapy will be moved toward certification with the American Association of Pastoral Counselors and the American Association of Marriage and Family Therapists. Course PP 276A (or its equivalent) is considered a prerequisite for a major in pastoral psychology. It is not applicable toward the eight courses required for the degree, although it will be indicated on the student's transcript. Accordingly, the student majoring in this area should ordinarily make provision for a program extending for a full calendar year.

Financial Aid. Please note in the pertinent sections of the chapter "Financial Information" that the charges for tuition and general fee for the Th.M. degree are combined and are made on the basis of the number of courses taken, and that in order to be eligible for medical care a student must be taking at least three courses.

Continuation Requirements. The following are the continuation requirements for the Th.M. degree program.

1. The student must maintain a cumulative grade point average of 3.0. A student who falls below this level is terminated.
2. The progress of all students is reviewed at the end of every semester by the Academic Standing Committee.

The Th.M. degree must be completed within three years (six semesters). The minimum time in which the degree can be completed is one year (two semesters).

To be classified as full time a student must be enrolled in three or more courses in a semester.



Duke Summer Session

While the Divinity School does not presently offer a regular summer program, students may enroll for intensive biblical language courses (Hebrew in 1986 and Greek in 1987) or individual directed study. Summer courses of graduate level may also be taken in other departments as cognate credits (maximum of two, see provisions under administration of the curriculum). Permission for such credits must be secured in advance from the instructor and from the Associate Dean for Curricular Affairs, but official registration and payment of fees are handled in the Office of Summer Educational Programs, 120 Allen Building, Duke University, Durham, North Carolina 27706.

Special Programs

Duke Divinity School is a participant in the National Capital Semester for Seminarians conducted by Wesley Theological Seminary in Washington, D.C. Students may, with the approval of the Associate Dean for Curricular Affairs, enroll in this one-semester program focused on political issues and social ethics, and receive up to four transfer credits. Applicants must have completed at least two and not more than four semesters at Duke to be eligible.

International Study Programs

For several years the Divinity School has been developing programs of international study and exchange involving faculty and students. The main areas in which the development is centered at this time are the following:

Mexico Seminar. Brief intensive travel-study to foster appreciation of Mexico, its people, history, culture, and religion—with special attention to the faith and mission of the church in Latin America today. Direct encounter with Third World poverty. About twelve persons per seminar. Twice annually.

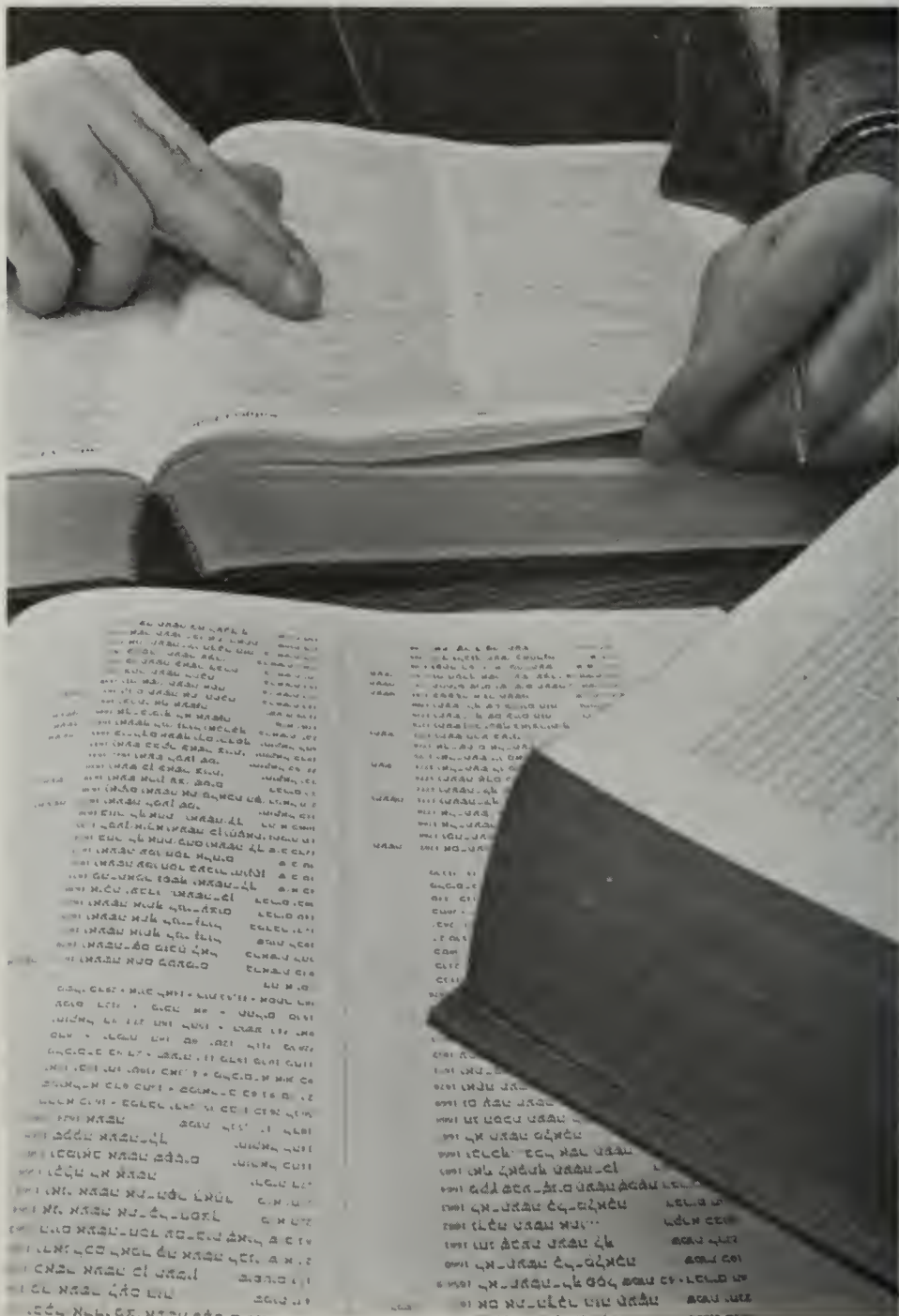
China Seminar. A travel-study seminar on the re-emergence of the Church in China focusing on the unprecedented response to the Church in a Marxist society. Participants have the opportunity also to learn about China and its people and see firsthand the changes taking place in this remarkable country. Biannually.

Robert E. Cushman Exchange Fellowship. Each year faculty and staff nominate a student to represent the Divinity School in the Bonn/Duke Exchange program. At Bonn University (West Germany) the student for a year becomes thoroughly acquainted with another culture and different church life. Full participation in classes at Bonn required. Language preparation necessary.

Dumfries, Scotland. In cooperation with St. Michael's Parish, Dumfries, Scotland, the Divinity School offers an academic year's experience. A modest stipend provides basic support and trans-Atlantic air fare. This opportunity is open each year to one rising senior who serves as a full-time parish assistant for this parish of the Church of Scotland.

A more extensive description of the Divinity School's international programs follows the section on Field Education.

Courses of Instruction



Course Enrollment

The required courses of the curriculum are: Old Testament 11, New Testament 18, Church History 13 and 14, American Christianity 28, Christian Theology 32, Christian Ethics 33, and Black Church Studies 124. Other courses numbered through 199 are elective courses for Divinity School students only. Most courses numbered 200 and above are approved for credit by both the Divinity School and the Graduate School, and require the permission of the instructor. For other prerequisites the student should consult the roster of courses of instruction in this bulletin and should also refer to published registration advices at the time of registration for each semester.

Courses jointly approved by the Divinity School and the Graduate School of Duke University are published in the *Bulletin of Duke University: The Divinity School*. Courses offered in the Department of Religion of Duke University, or as cognate courses in other departments, must be of graduate level (numbered 200 or above) in order to fulfill requirements for degrees in the Divinity School.

Projected Course Offerings

The following list of proposed course offerings for the 1986–7 academic year is tentative and subject to change. Detailed listings are available at the time of preregistration in the middle of the preceding semester, and more distant plans may be ascertained by consulting the divisional representative or the instructors concerned.

Fall Semester 1986

Old Testament (OT) 11, 115, 343, 350
New Testament (NT) 103, 114, 117A, 117C, 118, 226E, 257
Church History (CH) 13, 125
Historical Theology (HT) 318
American Christianity (AC) 28, 199
Christian Theology (CT) 32, 118, 119, 134, 200, 259, 326, 332
Christian Ethics (CHE) 107, 266, 388
World Christianity (WC) 263
Care of the Parish (CP) 151, 159
Christian Education (CED) 105, 109, 231
Church Worship (CW) 141, 178, 180
Pastoral Psychology (PP) 70, 164, 170, 172, 177, 271, 276A, 277A, 278, 281A
Preaching (PR) 30, 181

Spring Semester 1987

Old Testament (OT) 101, 106D, 116, 353
New Testament (NT) 18, 104, 117B, 226B, 227A, 309
Church History (CH) 14, 123, 236, 334
Historical Theology (HT) 317, 318, 338
American Christianity (AC)
Christian Theology (CT) 108, 110, 119, 217, 220, 249, 272, 322
Christian Ethics (CHE) 33, 130, 136, 213, 215, 244, 292, 389
Black Church Studies (BCS) 124
World Christianity (WC)
Care of the Parish (CP) 129, 130, 155B, 155E, 157, 160
Christian Education (CED) 132, 167, 220, 226, 233
Pastoral Psychology (PP) 172, 175, 178, 180, 233, 276B, 277, 281B
Preaching (PR) 30, 183

I. Biblical Studies

OLD TESTAMENT

11. Introduction to Old Testament Interpretation. An introduction to the literature, history, and religion of ancient Israel with emphasis upon exegetical methodology. *Bailey and Murphy*

101. The Prophetic Movement. A study of the prophetic movement in Israel from the earliest period to the postexilic development of apocalyptic with special reference to the content and religious teaching of the prophetic writings. *Efird*

106. Exegesis of the English Old Testament. Prerequisite: OT 11 or equivalent.

106A. Genesis. *Bailey*

106B. Amos and Hosea. *Bailey*

106D. Wisdom Literature in the Old Testament. *Murphy*

106E. Old Testament Psalms. Exegesis of various literary types; theological orientation of Old Testament liturgical prayer; implications for prayer and liturgy today. *Murphy*

109. The Religion of the Old Testament. A study of the religious ideas contained in the Old Testament with special reference to their interpretation from Robertson Smith to the present. *Efird*

115-116. Introduction to Biblical Hebrew. Elements of phonology, morphology, and syntax. Exercises in reading and writing Hebrew. Exegetical treatment of the book of Jonah. (Two semesters: no credit will be given for 115 without completion of 116.) *Bailey*

130. Dying and Death. Critical consideration of biblical, legal, medical, and ethical perspectives. Prerequisites: OT 11, NT 18, or equivalents. *Bailey, H. Smith, and others*

180. From Text to Sermon. (See PR 180.) *Staff*

207. Intermediate Biblical Hebrew I. Historical Hebrew grammar with reading and exegesis of Old Testament prose (Pentateuch and historical books in alternate years). *Wintermute*

208. Intermediate Biblical Hebrew II. Historical Hebrew grammar and rapid reading of prose and poetry. *Meyers*

209. Old Testament Theology. Studies of the Old Testament in regard to theological themes and content. Prerequisite: OT 11 or equivalent. *Murphy*

220. Rabbinic Hebrew. An interpretive study of late Hebrew, with reading from the Mishnah. *Staff*

223. Exegesis of the Hebrew Old Testament. Prerequisite: OT 115–116.

223A. Amos and Hosea. Stress on hermeneutical method. *Bailey*

223B. Job. *Murphy*

223C. I Samuel. *Bailey*

223D. Song of Songs. *Murphy*

223E. Ecclesiastes. *Murphy*

237. History of the Ancient Near East. Emphasis upon the religions, literature, and art of Mesopotamia. *Bailey*

242. Life after Death in Semitic Thought. Consideration of the various ideas from the early second millennium through the Intertestamental Period. Exegesis of selected Old Testament passages. Evaluation of recent research. Prerequisite: OT 11 or equivalent, knowledge of Hebrew helpful but not required. *Bailey*

302. Studies in the Intertestamental Literature. Selected documents of the Apocrypha and Pseudepigrapha examined exegetically and theologically in their relation to postexilic Judaism. *Staff*

304. Aramaic. A study of the Aramaic portions of the Old Testament and selected passages from the Elephantine and Qumran texts. *Wintermute*

343. Readings in Ancient Near Eastern Literature. *Murphy*

350, 351. Seminar in Old Testament. Research and discussion on selected problems in the Old Testament and related fields. *Murphy*

353. Seminar on Text Criticism. Emphasis upon transmission, versions, apparatus, and method. Prerequisites: NT 103–104 and OT 115–116 or equivalents. *Bailey and others*

373–374. Elementary Akkadian. Study of the elements of Akkadian grammar. Reading of neo-Assyrian texts shedding light on the Old Testament. Prerequisite: biblical Hebrew. (Two semesters: not credited separately.) *Bailey*

375–376. Elementary Ugaritic. Study of the elements of Ugaritic. Prerequisite: biblical Hebrew. (Two semesters: not credited separately.) *Staff*

NEW TESTAMENT

18. Introduction to New Testament Interpretation. An introduction to the literature of the New Testament with special attention to the perspectives and methods of historical-critical investigation and interpretation. *Efird, M. Smith, or Via*

103–104. Hellenistic Greek. Designed for beginners to enable them to read the Greek New Testament. (Two semesters: no credit will be given for 103 without completion of 104; however, students with at least one full year of college Greek may be permitted to enroll in 104.) *Efird*

105. Studies in Paul. An investigation of Paul's apostolate based upon the Acts and the Epistles with attention to Paul's theology as reflected in selected passages. *Efird*

114. Jesus in the Gospels. A consideration of the origins, transmissions, and literary fixation of the Jesus traditions with special attention to the message of the Kingdom, the problem of messianic self-consciousness, and the passion. *M. Smith or Via*

116. Exegesis of the English New Testament I. *Staff*

116A. Luke-Acts

116B. Galatians

- 116C. Selected Later Epistles
- 116D. I and II Corinthians
- 116E. Matthew
- 117. Exegesis of the English New Testament II.** *Staff*
 - 117A. The Gospel and Epistles of John
 - 117B. Romans
 - 117C. Revelation
 - 117D. Mark
- 118. The New Testament in Greek.** Readings in the Gospels. *Staff*
- 119. The New Testament in Greek.** Readings in the Epistles. *Staff*
- 180. From Text to Sermon.** (See PR 180.) *Staff*
- 225. Living Issues in New Testament Theology.** Critical examination of major problems and issues in New Testament interpretation and theology. Prerequisite: NT 18 or equivalent. *M. Smith or Via*
- 226. Exegesis of the Greek New Testament I.** Prerequisite: NT 103–104. *Price, M. Smith, or Via*
 - 226A. Mark and Matthew
 - 226B. Romans
 - 226C. Mark
 - 226D. I and II Corinthians
 - 226E. The Gospel and Epistles of John
- 227. Exegesis of the Greek New Testament II.** Prerequisite: NT 103–104. *Price or M. Smith*
 - 227A. Luke-Acts
 - 227B. Galatians
 - 227C. The Pastoral Epistles
- 257. New Testament Ethics.** An examination of several approaches to the scope and issues of New Testament ethics, including such topics as symbolic language in ethical discourse, the place of the law, conscience, community, sexuality, and property. *Via*
- 309. Hermeneutics.** Consideration of the nature of understanding and of several interpretive methods including phenomenological, existential, historical, literary, and structural. Their application to New Testament texts, primarily the parables of Jesus. *Via*
- 311. Pharisaic Judaism in the First Century.** A reading course in first-century Pharisaic Judaism. *Staff*
- 312. Pauline Theology.** Studies in some aspects of Paulinism in the light of recent scholarship. *Staff*
- 314. Judaism and Christianity in the New Testament.** A study of their interaction with special attention to Paul. *Staff*
- 319. The Gospel According to St. Matthew in Recent Research.** *Staff*
- 340, 341. Seminar in the New Testament.** Research and discussion on a selected problem in the biblical field. *M. Smith*
- 345. The Epistle to the Hebrews in Recent Research.** *Staff*

II. Historical Studies

CHURCH HISTORY

13. History of the Church to the Protestant Reformation. A survey through the fifteenth century in terms of spiritual genius, organizational development, great literature, and representative movements. *Gregg and Steinmetz*

14. History of Modern European Christianity. A survey of the main currents in Reformation and post-Reformation church history. *T. Campbell or Steinmetz*

105. Studies in Patristic Christianity. Selected issues in the worship, theology, and politics of the early Church. *T. Campbell or Gregg*

125. The Evangelical Heritage. A study of evangelical Christianity from the mid-seventeenth century to the present. *T. Campbell*

126. The English Reformation. The religious history of England from the accession of Henry VIII to the death of Elizabeth I. Extensive readings in the English reformers from Tyndale to Hooker. *Steinmetz*

183. Renewal Movements in Church History. An investigation of renewal movements as parallel phenomena throughout Christian history utilizing social-scientific studies of culture change and focusing on ancient monasticism, Franciscanism, Anabaptism, and early Methodism as representative renewal movements. *T. Campbell*

202. Religion of the Cappadocian Fathers. Examination of the careers and writings of Basil, Gregory of Nyssa, and Gregory of Nazianzus. *T. Campbell or Gregg*

235. The English Church in the Eighteenth Century. Studies of Christianity in England from the Act of Toleration, 1689, to the death of John Wesley, 1791. *Staff*

236. Luther and the Reformation in Germany. The theology of Martin Luther in the context of competing visions of reform. *Steinmetz*

247–A, B. Readings in Latin Theological Literature. Critical translation and study of important theological texts in Latin from various periods of the history of the Church. Prerequisite: reading knowledge of Latin (introductory course offered in the classics department). *Staff*

334. Theology and Reform in the Later Middle Ages. Examination of selected issues in the life and thought of the medieval church from the twelfth century through the fifteenth century. Readings in popular and academic theologians from Pierre Abelard to Gabriel Biel. *Steinmetz*

339. The Radical Reformation. Protestant movements of dissent in the sixteenth century. Special attention will be devoted to Muntzer, Carlstadt, Hubmaier, Schwenckfeld, Denck, Marpeck Socinus, and Menno Simons. *Steinmetz*

344. Zwingli and the Origins of Reformed Theology. Source studies in the early Reformed tradition. *Steinmetz*

HISTORICAL THEOLOGY

114. Christologies of the Early Church. Investigation of important soteriologies and debates centering upon the person of Christ from the second through the fifth centuries. *T. Campbell or Gregg*

123. Readings in Historical Theology. Prerequisite: CH 13–14. *Staff*

183. Teachings of the Christian Churches. An historical examination of Eastern Orthodox, Roman Catholic, Protestant, and evangelical doctrinal statements. *T. Campbell*

201. Christian Thought in the Middle Ages. A survey of the history of Christian theology from St. Augustine to the young Martin Luther. *Steinmetz*

204. Origen. The systematic and apologetic writings of an important Alexandrian thinker and exegete of the third century. *Gregg*

219. Augustine. The religion of the Bishop of Hippo in the setting of late antiquity. *Gregg*

241. Problems in Reformation Theology. Prerequisite: permission of the instructor. *Steinmetz*

246. Problems in Historical Theology. Prerequisite: permission of the instructor. *Staff*

260. Life and Thought of the Wesleys. A seminar on John and Charles Wesley and their colleagues in relation to English culture and religion in the eighteenth century. Prerequisite: permission of the instructor. *T. Campbell*

308. Greek Patristic Texts. Critical translation and study of selected Greek texts illustrative of significant aspects of patristic theology and history from the second through the fifth century A.D. *Staff*

313. The Apostolic Fathers. A study of the religious thought in the writings of the Apostolic Fathers. *Staff*

317. Seminar in the Greek Apologists. A study of the apologetic writings of the Greek Fathers in relation to the challenges of their contemporary world. Special attention will be given to leading protagonists of late Graeco-Roman culture, such as Celsus, Porphyry, and Julian. *Staff*

318. Seminar in the Greek Fathers. A study of selected topics from the Greek Fathers. *Gregg*

337. Theology of St. Thomas Aquinas. Intensive reading in the *Summa Theologica* and biblical commentaries. *Steinmetz*

338. Calvin and the Reformed Tradition. The theological development of John Calvin. A comprehensive examination of his mature position with constant reference to the theology of the other reformers. *Steinmetz*

AMERICAN CHRISTIANITY

28. History of American Christianity. A consideration of the nature of Christianity in America and the history of its development. *Gilbert and staff*

127. Modern American Religious Leaders. Recent American Christianity as seen through selected biographical studies. *Staff*

199. The American Social Gospel. A study of Protestant social thought and action in America since 1865. *Staff*

296. Religion on the American Frontier. A study of the spread of evangelical Christianity as a theological and cultural phenomenon of the American West. *Staff*

384. Religious Dissent in American Culture. History and significance of dissent in the theology and culture of America. *Staff*

385. Religion in American Literature. A critical study of the meaning and value of religious motifs reflected in American literature. *Staff*

395. Christian Thought in Colonial America. Exposition of the main currents in Protestant theology. *Staff*

396. Liberal Traditions in American Theology. A study of the main types of modern religious thought, beginning with the theology of the Enlightenment. *Staff*

397. Contemporary American Theology. A critical appraisal of major tendencies. *Staff*

HISTORY OF RELIGIONS

180. Introduction to Asian Religions. Preliminary consideration of problems and methods in the study of religious traditions, followed by a survey of the historical development, beliefs, practices, and contemporary significance of the Islamic religion and the religions of India, China, and Japan. *Staff (Department of Religion)*

See other courses offered in the Department of Religion.

III. Theological Studies

CHRISTIAN THEOLOGY

32. Christian Theology. The major themes of the theology of the Church. *Herzog, Langford, and Wainwright*

102. Science and Biblical Theism. Implications of scientific knowledge in relation to biblical understandings of creation, revelation, and providence. *Staff*

108. Major Types of Protestant Theology. A survey of Protestant theology from the reformers to Karl Barth. (For juniors only.) *Herzog or Langford*

110. This Life and the Age to Come. Christian eschatology and the meaning of history in the light of God's triumph over sin, suffering, and death. *Staff*

112. The Doctrine of the Holy Spirit. An examination of pneumatology under systematic categories which include: creation, Old Testament, prophecy, the life and ministry of Christ, the Church, salvation, the canon, the sacraments, and eschatology. *Turner*

118. Nineteenth-Century Protestant Theology. Examination of major figures and theological issues of nineteenth-century Protestant theology in context with attention to the role of experience in theological reflection, faith, and historical consciousness, and faith and culture. *Fulkerson*

124. Issues in the Wesleyan Theological Tradition. A study of selected historical and constructive themes. Specification of topics will be made at each time of offering. *Langford*

134. Theology of Pentecostalism. An exploration of this tradition with examination of its distinctive emphases and interpretations of Christian faith. *Turner*

149. Images of the Church. Selected theologies of the nature of the church from the reformation to present. *Fulkerson*

200. The Person and Work of Christ. The problem of knowledge of Christ and formulation of a doctrine of his work and person in the light of biblical eschatology. *Staff*

210. Contemporary British Theology. Selected problems in representative British theological writings after 1900. *Langford*

211. Authority in Theology. The idea and function of authority in theology. *Langford*

215. The Nature and Mission of the Church. Christian understanding of the Church—biblical, historical, contemporary—with a view toward ecumenical doctrinal construction. *Herzog*

- 216. Kierkegaard Studies.** Critical examination of selected works. *Staff*
- 217. Church and Sacraments.** The basic teachings on church and sacraments, biblical, historical, contemporary. *Herzog*
- 220. Theological Explorations.** A seminar on contemporary theological issues, content to be designated by the theological division. *Staff*
- 225. The Christian Understanding of Human Nature and Destiny.** Representative historical and recent theological interpretations of human nature, predicament, deliverance, and possibility. *Staff*
- 226. Theology and Contemporary Secular Understandings of Man.** Critical theological examination of selected current interpretations of human nature and the human situation. *Staff*
- 229. Tragedy and Christian Faith.** An analytical and constructive philosophical interpretation of the fundamental tragic dimension of human life in the light of a Christian theological understanding. *Staff*
- 249. The Lord's Prayer.** By studying historic and contemporary expositions of the Lord's Prayer, the course provides an introduction not only to the doctrines of God, humanity, prayer, and the kingdom, but also to the variety of the Christian spiritual tradition in time and space. *Wainwright*
- 256. John Wesley in Controversial and Ecumenical Theology.** A study of John Wesley and his theology both in his engagements with other confessional traditions, and in his views on such matters as church, ministry, sacraments, and authority. Consideration will also be given to these topics in relation to contemporary theology, especially "Faith and Order." *Wainwright*
- 259. Icon Theology.** A study of theological controversies surrounding the use of images in Christian worship, followed by an attempt to perceive the symbolic conventions and doctrinal content of some Eastern, Western, and contemporary icons. *Wainwright*
- 272. Theology of Paul Tillich.** An examination of Tillich's philosophical theology. *Staff*
- 279. Understandings of the Resurrection in Contemporary Theology.** A study of recent literature on the resurrection of Jesus Christ from the angles of exegesis, historical criticism, hermeneutics, and systematic significance. *Wainwright*
- 300. Systematic Theology.** Method and structure of systematic theology, the doctrine of God, theological anthropology, and Christology. Prerequisite: CT 32 or equivalent. *Herzog or Langford*
- 303. Philosophical Method in Religious Studies.** European hermeneutic (Gadamer) and American process philosophy (Whitehead and Hartshorne) as applied to Christian theology. *Herzog*
- 320. Theology, Power, and Justice.** Critical examination of a major theme of modern thought in Schleiermacher, Hegel, Marx, and Tillich. *Herzog*
- 322. Nineteenth-Century European Theology.** Protestant theology from Kant to Herrmann. *Herzog*
- 325. Philosophical Theology I.** Selected readings from Plato and Aristotle which helped to shape philosophical theology from Origen through Augustine and Aquinas. *Herzog*
- 326. Philosophical Theology II.** Main problems of philosophical theology in the modern period. *Staff*

328. Twentieth-Century European Theology. Critical examination of the thought of selected Protestant theologians from 1900 to 1950. Prerequisite: CT 32. *Herzog*

329. Readings in Theology and Language. Sample treatments of religious language in linguistic analysis, hermeneutical theory, literary criticism, liturgical practice, and fundamental theology. *Wainwright*

330. Contemporary Christologies. A seminar dealing with contemporary Roman Catholic and Protestant Christology. Readings and discussion will focus on theological proposals from major contemporary figures. *Wainwright*

331. Eschatology. A study of issues in individual, communal, and universal eschatology against the background of twentieth-century scholarly work in the kingdom of God. *Wainwright*

332. System in Theology. An examination of the various factors that go into the shaping of a systematic theology, followed by a study of several recent and contemporary examples of the genre. *Wainwright*

352. Seminar in Christian Theology. Research and discussion of a selected problem in the systematic field. *Staff*

CHRISTIAN ETHICS

33. Christian Ethics. Theological assumptions, ethical principles, and their application to contemporary issues of Christian social policy. *Hauerwas, Lacy, and H. Smith*

107. The Biblical Bases of Christian Ethics. Examination of major themes and moral teachings, principally in the Decalogue, the Gospels, and the Epistles, with application to some contemporary issues. Prerequisite: OT 11, NT 18, or equivalent. *H. Smith*

112. Technology and Christian Ethics. The impact of the technological revolution upon American culture, and a normative Christian response. *Staff*

113. Contemporary Issues in Christian Morals. Constructive examination of selected areas of public and private morality. *Staff*

130. Dying and Death. Critical consideration of biblical, legal, medical, and ethical perspectives. Prerequisites: OT 11, NT 18, or equivalents. *Bailey, H. Smith, and others*

132. Revelation and Authority in the Church. Critical examination of an ontology of church, language, and practice. *H. Smith*

136. Perspectives on Food and Hunger. An interdisciplinary symposium on national and world hunger and malnutrition, including (whenever possible) student involvement in local hunger-related agencies. *Lacy and others*

194. The Protestant Church and American Culture. Analysis from the perspective of Christian ethics of current problems in the interpretation of church and culture with explicit reference to the parish setting. *H. Smith*

205. War in the Christian Tradition. An analysis of how Christians have understood and evaluated war. Particular attention to the question of whether war should not be regarded as a positive moral good. Works by Augustine, Aquinas, Bainton, Ramsey, Childress, Niebuhr, and Johnson will be considered. *Hauerwas*

220. Ethical Explorations. A seminar on contemporary ethical issues, the specific content in any given semester to be designated by the Theological Division. *Staff*

230. Moral and Value Education. A critical, theological investigation of Durkheim, Dewey, Simon, Kohlberg, Bull, Rokeach, and implications for education in church and society. Prerequisites: CHE 33 and CED 105. *H. Smith and Westerhoff*

242. Human Sexuality. Examination of biological, biblical, cultural, and other aspects of human sexuality, together with analytical and constructive interpretation. Permission of instructor required. *H. Smith*

244. Interdisciplinary Seminar in Medical-Legal-Ethical Issues. A seminar composed of students and faculty from the Medical, Law, and Divinity Schools for critical consideration of selected pertinent issues of mutual professional interest. Prerequisite: permission of instructor. *H. Smith and others*

245. Ethics in World Religions. Moral foundations, assumptions, and applications in such historic faiths as Hinduism, Buddhism, Confucianism, and Islam, in the light of Christian ethical perspectives. *Lacy*

262. Marxist Ideology and Christian Faith. Comparative examination of Communist and Christian doctrines such as man, society, sin, history and eschatology, together with an introduction to the contemporary dialogue. *Lacy*

266. Ethics and Health Care. Critical examination of philosophical and theological bases of medical practice, and analysis of selected aspects of biomedical technologies, with particular attention to informing ethical assumptions. *H. Smith*

290. Current Problems in Christian Social Ethics. A critical study of secularization, the technological revolution, and the ecological crisis. *Staff*

291. Historical Forms of Protestant Ethics. A survey of major types of Protestant ethical theory from Luther through contemporary figures. *Staff*

292. Happiness, the Life of Virtue, and Friendship. An investigation of the interrelation of these themes in selected authors. An examination of whether the loss of the interrelation of these themes accounts for some of the problems of modern philosophical and theological ethics. *Hauerwas*

294. Christianity and the State. "Civil religion" in its historic development and contemporary expressions in America. Christian ethical premises of democratic political theory and practice. The relationships of church and state. *Staff*

383. Moral Theology in the Twentieth Century. Critical and comparative examination of ethical theory as exhibited in the work of selected contemporary theologians. *H. Smith*

387. Ethical Method. Selected methodological issues in contemporary theological ethics. *H. Smith*

388. Ethics and Health Care. A critical study of selected aspects of modern biomedical technology with special reference to the ethical assumptions informing their development and practice. *H. Smith*

389. Christian Ethics and Contemporary Culture. A study of the interaction between Christian thought and current secular social theory. *Staff*

BLACK CHURCH STUDIES

100. Introduction to Black Theology. An examination of the historical roots of black theology with special attention to the treatments of traditional themes and problems in theology by black theologians and their rationale for the black theological enterprise. *Turner*

124. The Black Church in America. A consideration of the historical and theological development of the separate black Christian denominations in America with attention to some of the major leaders, black worship, and black preaching. *Turner*

126. Black Religion and Social Conflicts in America. An examination of some of the reactions of black religious groups to the limits placed upon black people in American life, efforts made to break down racial barriers in society, and attempts to institutionalize black responses to such barriers. *Turner*

128. The Life and Thought of Martin Luther King, Jr. An examination of the life of Martin Luther King, Jr. as a minister and leader of the civil rights movement. *Staff*

144. Selected Topics in Black Church History. An exploration of pivotal events, key issues, and persons in the development of the black church in America. Prerequisite: BCS 124 or permission of the instructor. *Staff*

WORLD CHRISTIANITY AND ECUMENICS

124. The Christian World Mission. A study of theological foundations, guiding principles, and contemporary problems of the world Christian community. *Lacy*

133. The Expansion of Christianity. A survey of the spread of Christianity and the growth of the worldwide Church with special emphasis on nineteenth- and twentieth-century Protestantism in the non-Western world. *Lacy*

135. Contemporary Issues in the World Church. Analysis of political, social, cultural, and religious conditions in a selected area of the world, and of theological-ethical insights and perspectives within the indigenous Christian community. *Lacy*

156. The Ecumenical Movement. Its contemporary development, structures, activities, and problems, against the background of Church unity and disunity. *Lacy*

263. Third World Theology. An examination of selected theological writings from Asia, Africa, and Latin America, comparing their perspectives and their unique contributions with contemporary Christian thought. *Lacy*

386. Christianity in Dialogue with Other Faiths. Contemporary currents of Christian thought as they relate to resurgent non-Christian religions and involve new formulations of a theology of mission. *Lacy*

IV. Ministerial Studies

THE CARE OF THE PARISH

128. Ministerial Leadership and Participative Skills. A study of the pastor's role as participant-facilitator with attention to organizational theory and facilitative skills employing the group workshop method of learning. *Ingram*

129. The Pastor as Consultant to Church Organizations. A consideration of the pastor's role as organizational consultant with special emphasis on data gathering, diagnosis, and intervention using experiential learning designs. *Ingram*

130. Planning and Directing the Church's Program. Principles of planning, organizing, staffing, directing, and evaluating the program of the local church. *Ingram*

142. Women and Ministry. Theological and practical issues related to women and ministry. *Staff*

147. The Pastoral Responsibility for Administration. A consideration of the major responsibilities of the pastor in the administration of the local church. *Ingram*



148. Christian Stewardship and Church Finance. A seminar to consider the principles of stewardship, education, budget-making, enlistment in church support and church financial management in theological perspective. *Ingram*

150. Church and Community. The structure and dynamic factors shaping the present-day community together with their import for the work of the church. *Wilson*

151. The Town and Country Church. The small church, the circuit church, circuit administration, larger parish and group ministry, and the town and country movement. *Wilson*

152. Evangelism As a Pastoral Concern. A study of the nature, purposes, and methods of contemporary Christian evangelism with special attention to the local church. *Ingram*

154. The Urban Church. The function, nature, program, and administration of the effective city church and of the urban minister's distinctive task. *Wilson*

155. Church Polity.

155B. The Baptist Churches

155C. The United Church of Christ

155D. The Presbyterian Churches

155E. The Christian Church (Disciples of Christ)

155F. The Episcopal Church

157. The Church and Social Change. A sociological study of the relationship of the Church to the process of social change, including the role of the Church as innovator, the Church as participant in social movements, method(s) of accomplishing change, and the religious leader as an agent of social change. *Wilson*

158. Contemporary Religious Sects. The nature, ideology, development, clientele, and role of contemporary religious sects; the process by which such sects develop into established organizations; and their relationship to the mainline churches. *Wilson*

159. Early Methodism: History, Theology, and Polity. A study of the character and development of Methodism, beginning with John Wesley and tracing important features of this tradition through the nineteenth century. *Langford and Wilson*

160. Twentieth-Century Methodism: History, Theology, and Polity. The development of the United Methodist Church, focusing on theological diversity and patterns of organizational life, with major concentration on the polity of this church as provided by the current *Discipline*. *Langford and Wilson*

179. Church Research. Methods of research and survey for the gathering, analysis, and interpretation of church and community data, together with preparation and use of denominational statistics. *Wilson*

189. The Multiple Staff Ministry. Group work, leadership, and organizational theories as applied to staff ministries in large church and cooperative parish settings. *Ingram*

220. Seminar in Contemporary Ministries. A seminar in patterns and issues of contemporary ministries, content to be designated by the Ministerial Division. *Staff*

CHRISTIAN EDUCATION

102. Christian Education and the Small Membership Church. An overview of the educational ministry of churches with small memberships including goal setting, program-format, leadership development, selection of curriculum resources, organization-design, and evaluation methodology. *Shockley*

105. Education as a Pastoral Ministry. An introduction to catechetics or Christian nurture within the life of a faith community. *Westerhoff*

109. Ministries with Youth. An experimental approach to inventing strategies for church educational ministries with junior highs, senior highs, and older youth. Attention will be given to teaching methods, curriculum resources, confirmation, and various teaching settings. *Shockley*

110. Educational Ministries with Adults and Families. An introductory course to the educational ministry of the church with adults and families. Guidance and resources toward the development of comprehensive programing. Attention will be given to adult ages and stages and family life cycles. *Shockley*

112. Educational Ministries with Children and Youth. An introductory course to the educational ministry of the church with children and youth. It will consider foundations, religious development theories, goal-setting, teaching-learning, curricula, and leadership education. *Shockley*

132. Curriculum, Teaching, and Learning in Christian Education. An introductory survey of teaching-learning theory, principles and practices, curriculum designs and resources, from a local church perspective. *Shockley*

153. Education and Social Issues. An exploration of contemporary social issues and their relationship to education and to the church. *Shockley*

169. Major Issues in Christian Education. Critical examination of selected issues in Christian education. *Staff*

185. Religious Education and the Arts. The place and the effect of imagination in religion and education, and the use of the arts in religious education. *Westerhoff*

190. Pastor as Teacher. An applied course in the teaching-learning process and models, strategies, and methods for planning and designing education in the parish. *Westerhoff*

192. Ethnicity and the Church's Mission and Ministry. Applying the insights of cultural anthropology to evangelization and nurture. *Westerhoff*

193. Living Faiths and Christian Education. An exploration of Christian education in the light of the faiths of other persons with special attention to Judaism. *Westerhoff*

220. Colloquium in Religious Education. *Staff*

231. Spiritual Formation. An introduction to spirituality, spiritual formation, and the development of a personal spiritual discipline. *Westerhoff*

233. Spiritual Direction. An introduction to spiritual direction with special attention to the *Spiritual Exercises* of St. Ignatius and discernment. Prerequisites: CED 231 and permission of the instructor. *Westerhoff*

PASTORAL PSYCHOLOGY

70. Group Process and Personal Identity. A small group experience to enhance personal growth and explore personal identity and interpersonal styles of relating. *Staff*

164. Pastoral Counseling in a Parish Setting. The local church as the setting for pastoral counseling. Lectures, group supervision, and student verbatim materials will be utilized. Prerequisite: currently placed in a field setting or permission of instructor. *Mickey*

170. Pastoral Conversation. A consideration of the nature of the pastor's conversation with people in the total caring ministry grounded in the person-centered un-

derstanding of personality processes and human relationship, using textual and conversational materials. *Staff*

171. Pastoral Counseling. Consideration of the structures and processes of pastoral counseling; pastoral evaluation, referral, intake contract, goals, transference, termination, and other special problems. Prerequisite: permission of instructor. *Staff*

172. Premarital Counseling. Pastoral care in marriage and family life with special emphasis on premarital guidance within the context of the local church's program of family life education. *Staff*

173. Psychotherapy and Sanctification. An analysis of structuring and growth processes in psychotherapy in the light of a Christian understanding of sanctification. *Mickey*

174. Theology and Personality Processes. Theological and psychological understandings of basic human experiences; explorations of the dynamics and values or religious practices, developmental concerns, self awareness. *Mickey*

175. Pastoral Care Ministries in Critical Human Situations. A seminar utilizing lectures by visiting professionals, case materials, resource films, and readings, to inform ministers on the casual factors, behavioral patterns, preventive and treatment programs, and the role of the church and minister in such problems as alcoholism, drug addiction, dying and death, juvenile offenses, marital crisis, suicide, mental retardation, sexual deviation, psychiatric disorders. *Staff*

175A. Special Practicum Projects. For advanced students who want additional clinical experience under supervision in a pastoral care setting (inner-city; alcoholic rehabilitation; counseling; etc.). *Staff*

176. Pastoral Care and Persons in Institutions.

176B. Lectures by staff and ward visits at the Murdoch Center for the Mentally Retarded and the facilities in the Butner, North Carolina, complex (state hospital, alcoholic rehabilitation, training school). *Staff*

176C. Lectures by staff and ward visits at the Central Prison in Raleigh and related correctional facilities. *Staff*

176D. The Church's ministry to the elderly and homebound explored through lectures, case conferences, and visits to the elderly and homebound parishioners of local Durham churches. *Staff*

177. Pastoral Care in the General Hospital Setting. An examination through intensive individual and group supervision, of the student's pastoral ministry to the ill, the dying, and the bereaved in the general hospital setting. (Not recommended for those planning to take PP 277.) *Staff*

178. Power and Restraint in the Parish. Exploring the nature of power and leadership in developing skills for local church ministry, utilizing theological, psychological, sociological insights. Verbatim materials. *Mickey*

180. Pastoral Care and Women. Lecture-discussions by staff and visiting professionals to aid in developong skill in the pastoral care of women. Issues addressed: moral development, sexual dynamics, dual career families, child and spouse abuse, women in leadership positions. *Mickey*

271. Marriage and Family. The psychodynamics of marital conflict and family problems; principles and procedures in marriage and family counseling. (For seniors and Th.M. candidates.) *Staff*

273. Seminar in Pastoral Theology: Theological Dimensions of Pastoral Counseling. The relationship of process theology and theological anthropology to pastoral counseling. *Mickey*

275. Individual Study in Pastoral Psychology. Selected readings in major issues in pastoral psychology issuing in a research or honors paper. *Staff*

276-A,B. Basic Clinical Pastoral Education, Extended. A semester long unit of CPE in the fall semester and a semester long unit of CPE in the spring semester. The program is accredited by ACPE and is conducted at Duke Hospital. The maximum credit is two course credits. *Staff*

277-A,B,C. Basic Clinical Pastoral Education. Units of Basic CPE offered in the summer, fall, and spring in programs accredited by ACPE. (Two course units each, maximum credit.) *Staff*

278. Psychological Theories of Personality. A systematic presentation of leading personality theories, with reference to developmental processes (motivation, cognition, learning, etc.) and their implications for Christian ministry. *Mickey*

281-A,B,C. Advanced Clinical Pastoral Education in Pastoral Care and Counseling. Pastoral care with inpatients and pastoral counseling of individuals, couples, families, and groups in a pastoral counseling center. (Two course units each.) *Staff*

PREACHING

30. Theology and Practice of Preaching. The development of a theology of preaching and methods of sermon construction, including preaching in class, critique, private conference, and local church evaluation. Prerequisite: OT 11 or NT 18 or permission of instructor. *Lischer*

161. Preaching and the Church Year. Preaching the lectionary texts in the context of the church's worship and calendar. The appropriate cycle of the lectionary will be followed. In-class preaching and evaluation. *Lischer*

162. The Rhetoric of Preaching. Literary forms in biblical and nonbiblical literature as components of and models for preaching. Metaphor, poem, parable, story, and dialogue in oral communication. In-class preaching and evaluation. Prerequisite: OT 11 or NT 18. *Lischer*

163. Theologies of Preaching. Significant theories of preaching from Augustine to the present. Seminar presentations and in-class preaching and evaluation. Prerequisite: PR 30 or permission of instructor. *Lischer*

165. Preaching as Public Address. A workshop on preaching and worship leadership organized around the principles of speech and effective communication. Extensive use of audio-visual recordings and private conferences. Prerequisite: PR 30 or permission of instructor. *Lischer*

180. From Text to Sermon. Preaching from Biblical sources. Emphasis upon the goal and methodology of exegesis, the hermeneutic problem, and verbal communication in the present. Prerequisite: OT 11 and NT 18. *Staff*

181. Advanced Sermon Analysis Seminar. A critical study, on the basis of selected sermons and student presentations, of principal and practical problems facing the contemporary preacher. *Staff*

182. Advanced Preaching: Practice and Evaluation. An advanced laboratory course for extra competence in the preparation, delivery, and evaluation of sermons. Prerequisite: PR 30 and permission of instructor. *Lischer and staff*

183. Preaching in the Black Community. A study of the style and content of black preaching with attention to the unique roles of black preachers in society. An analysis of the essential characteristic of preaching in the black church. *Staff*

186. Twentieth-Century Preaching. A study of contemporary preaching based on printed, recorded, audio- and video-taped sermons of leading homiletics of our age. *Staff*

187. Pre-Reformation Preaching. Sermons, handbooks, and other historical sources studied in relation to biblical preaching and the liturgical church, the problem of popular ministry, and the issues of Christian reform. Prerequisite: CH 13. *Lischer and staff*

188. Post-Reformation Preaching. A study of the theological trends and significant personalities in the preaching tradition from the sixteenth century to the present. *Lischer and staff*

193. Theology and Preaching. An examination of the relation of systematic theology and homiletical presentation. *Lischer*

196. Preaching in the Parish. A consideration of preaching in relationship to pastoral duties and the total task of ministry with attention to week-by-week preaching in the parish setting. Some attention will be given to funerals and crisis situations. *Staff*

WORSHIP AND CHURCH MUSIC

123. Baptism, Confirmation, and Renewal. Biblical, historical, and theological perspectives on the sacrament of Christian initiation. Issues related to the catechumenate, baptismal practice, confirmation, and rites of renewal will be examined with reference to the reform of the liturgy. *Staff*

141. The Church Year. An historical and practical study of the church year and lectionary with major attention to the ecumenical and United Methodist calendar. *Staff*

153. The Leadership of Worship. A practical utilizing a laboratory setting devoted to the development of styles of liturgical leadership appropriate to pastoral ministry. *Staff*

167. Baptism and the Lord's Supper. Study of these sacraments with attention given to major representative traditions and to varieties of present observance and practice. *Staff*

168. Worship in the Wesleyan Tradition. The history, development, and current trends in United Methodist worship along with practical experience and concerns related to worship leadership in United Methodist churches. *Staff*

178. Christian Worship. A survey of the history of Christian corporate worship. Examination of the major biblical, historical, and theological developments in worship from Old Testament times to the present. Readings in liturgical thought through the ages with comparative study of selected liturgical traditions. *Staff*

180. Church Music. A two-fold study including: (1) a survey of the great monuments of church music; (2) musicianship, song-leading, and basic conducting with an emphasis upon the selection and use of hymns and other music from the *Methodist Hymnal* in public worship. *Staff*

250. Advanced Seminar in Liturgical Studies. Reading and research in a selected area of liturgical study to be announced. *Staff*

251. Studies in Spirituality. A consideration of different dimensions of the spiritual life. *Staff*

V. Clinical Training and Internships

CLINICAL TRAINING IN PASTORAL PSYCHOLOGY

Students may earn up to two course credits for a quarter or unit of clinical pastoral education in programs accredited by the Association for Clinical Pastoral Education (ACPE).

Students involved in clinical training under the direct supervision of members of the pastoral psychology staff during the academic year should register for credit under PP 277 for two course units unless a course credit has already been received for PP 177, in which case only one rather than two credits will be granted for the CPE quarter. Students should apply for such training through the Director of Clinical Pastoral Education.

Students involved in clinical training in summer CPE quarters should register with ACPE and the Associate Dean for Curricular Affairs as soon as accepted for training by a chaplain supervisor. Upon the receipt of a supervisor's report at the end of the training period the student will receive two course units of transfer credit.

INTERNSHIPS

In consultation with the Director of Field Education and the Associate Dean for Curricular Affairs, an individually designed internship may be developed in a particular ministerial vocational area of interest. Under certain circumstances it may be possible to earn one unit of field education and two course credits through such internships. Such programs must be formulated and recorded in advance in the offices of both field education and curricular affairs.

125-126. Special Ministry Internship. When a student needs to develop professional competencies in a highly specialized form of ministry, the Director of Field Education will assist in designing an appropriate learning contract and in negotiating for a suitable placement setting, provided the arrangements meet the basic criteria approved by the Field Education Committee.

131-132. Ministry through Social Agency Internship. A twelve-month placement in a regular personnel position in a social service agency to meet the job description of the agency and to develop a personal mode and style of ministry in a secular setting through understanding, appreciation, involvement in, and critical theological reflection upon environment, structures, values, and decision-making processes as conveyed by the conduct of the agency.

137-138. Parish Ministry Internship. A twelve-month placement, individually designed to engage the student in specified learnings in a wide variety of ministry functions in a local parish, under qualified supervision and using the guidelines of a learning contract.

143-144. Campus Ministry Internship. A nine-to twelve-month placement in approved locations designed to provide special learnings in delivering a ministry to college students under qualified guidance and utilizing a learning contract which specifies seminars, a personal journal, directed reading, and consultations to develop competency in these functions.

175-176. Clinical Pastoral Education Internship. A twelve-month placement in a clinical program accredited by the Association for Clinical Pastoral Education (ACPE).

197-198. Mission Internship. A special internship to prepare for service in church missions may be arranged by enlisting in the national or overseas program of the United Methodist Board of Global Ministries for one to three years. As a requirement for agency planning, applications should be initiated in the fall of the middler year.

Other denominational and/or work-study experiences abroad may be given field education credit by special arrangement with the Director of Field Education.

Department of Religion—Graduate Courses

The following courses are offered periodically in the Graduate Department of Religion by Department of Religion faculty and may be taken by divinity students with permission of the instructor.

- 217. Islam in India
- 219. Augustine
- 221. Reading in Hebrew Biblical Commentaries
- 230. The Meaning of Religious Language
- 231. Seminar in Christianity and Contemporary Thought
- 233. Modern Narrative and Religious Language
- 243. The Archaeology of Palestine in Biblical Times
- 244. The Archaeology of Palestine in Hellenistic-Roman Times
- 248. The Theology of Karl Barth
- 252. Nineteenth- and Twentieth-Century Roman Catholic Theology
- 254. Introduction to African Religions
- 255. Seminar in African Religions
- 258. Coptic
- 264. The Sociology of the Black Church
- 265. The Religions of the West Africa Diaspora
- 280. The History of Religions
- 281. Phenomenology and Religion
- 284. The Religion and History of Islam
- 301. Seminar in Contemporary Christian Ethics
- 302. Studies in Intertestamental Literature
- 304. Aramaic
- 304A. Targumic Aramaic
- 306. Language and Literature of the Dead Sea Scrolls
- 310. Readings in Judaica
- 323. A-B. Comparative Semitic I-II
- 324. Readings in the History of Religion
- 360. Special Problems in Religion and Culture
- 370. Seminar in Religion and Literature
- 380. Existentialist Thought

Appendix

GUIDELINES FOR INCLUSIVE LANGUAGE

Duke Divinity School

"... the decadence of our language is probably curable. Those who deny this would argue, if they produced an argument at all, that language merely reflects existing social conditions, and that we cannot influence its development by any direct tinkering with words and constructions. So far as the general tone or spirit of a language goes, this may be true, but it is not true in detail. Silly words and expressions have often disappeared, not through any evolutionary process but owing to the conscious action of a minority."

George Orwell
Politics of the English Language

The necessity for change is the parent of tradition. If we want a change in our language to come, we must first facilitate that change through concerted action. Our language is determined both by who we are as individuals and communities and who we want to become.

The affirmation of the integrity of people with various opinions and interpretations on the issue of language is assumed. It is recognized, however, that exclusive language can work unwitting and unintended harm by distorting reality and excluding members from our community. Therefore, all members of this Duke Divinity School community (students, faculty, administrators, and staff) are invited to join together in using language which most adequately reflects the unity of the people of God and the reality of God.

LANGUAGE ABOUT PERSONS

I. Generic Usage

Although "man" originally carried the meaning of both "human beings" and "adult males," such can no longer be assumed. Even though technically "man" is inclusive, its actual use is often exclusive.

- A. Use precise language. When in the past you would have been inclined to use the generic term "man," find creative ways to use such words as "humankind, humans, persons, everyone, men and women, children of God, etc."
- B. Use words that do not include "man" when referring to occupations and positions that can include both males and females. Alternative descriptions can often be found which are not awkward compounds:

<i>(instead of)</i>	<i>(try)</i>
Clergyperson	Clergy
Chairperson	Chair
Congressperson	Representative
Policeman	Police Officer
Fireman	Fire Fighter
Chairperson	Moderator, Presiding Officer, Convenor

II. Pronoun Usage

Pronoun usage which avoids gender specific categories is an effective way to include all members of society or a given community in general references. While English grammars generally maintain that the nonspecific individual be referred to as "he," such a reference is not inclusive. One should attempt to make all pronoun references inclusive.

A. When speaking in general terms or when referring to both women and men, use pronouns so as to make explicit that both men and women are included. This may be accomplished by using such methods as "he and she," "hers and his," or combinations such as "he/she," "s/he," and "his/hers."

B. Other approaches to the pronoun issue include:

1. Use writing that reduces unnecessary or excessive gender specific pronouns: "The average American drives his car to work" can become "The average American drives to work."
2. Rephrase statements into the plural: "Most Americans drive their cars to work."
3. When speaking in generic terms or when including women and men in the same group, some guides suggest alternating female and male pronouns: "A person should take good care of her car. He should check the oil level daily. She should also make sure that the tires are properly inflated."
4. The indefinite use of the second person pronoun *you* to refer to people in general is a widespread conversational device. You must realize, however, that the use of the second person in writing creates an intimate relationship between the writer and the reader. For this reason, when you use the second person, be sure that the person or persons to whom the argument is directed is clearly identified.
5. Masculine pronouns can be replaced by the impersonal pronoun *one* and this is still preferred in formal usage. However, one should use this form sparingly.

III. Forms of Address

Traditionally there has been little need for particular ways to refer to individual women or married individuals with different titles. Women did not have titles other than "Miss" or "Mrs.," and it was assumed that their identity derived from their marital status. That assumption is no longer valid, and forms of address should recognize that identity which women have as individuals.

A. In referring to an individual woman there is no need to refer to her marital status, just as traditional references to men give no indication of their marital status. Examples:

1. Ms. Lorna Stafford
2. The Reverend Ms. Louise Lind
3. The Reverend Mr. Louis Lind
4. Dr. Jennifer Jones

B. Different titles should be recognized when addressing married couples. Examples:

1. Clergywoman married to a layperson: The Reverend Ms. Sally Jones and Mr. Gerald Jones

2. Clergy couples: The Reverends Ms. Sally Smith and Mr. Gerald Jones; The Reverends Ms. Sally Jones and Mr. Gerald Jones; The Reverends M/ M Sally and Gerald Jones
 3. Other titles: Professor Louise Lind and Dr. Jonathan Smith; Drs. Cynthia and Jackson Whittaker
- C. While the use of individual names is assumed when married people have different titles, this is desirable for others as well. Instead of Mr. and Mrs. Steve Jackson, try:
1. Steve and Lorna Jackson
 2. Mr. and Mrs. Steve and Lorna Jackson
 3. M/M Steve Jackson and Lorna Stafford
- D. Titles can be eliminated altogether, but in formal usage this practice is generally not preferred.

IV. References to Collective and Abstract Nouns

Social institutions (e.g., Church), concepts (e.g., evil), or inanimate objects (e.g., a ship) do not have gender. Referring to them as female or male encourages stereotyping groups of people with the qualities specific to that institution, concept, or object.

- A. Pronouns that refer to collective and abstract nouns should be neuter, except in direct quotations.
1. Direct quotation: "And I saw the holy city, new Jerusalem, coming down out of heaven from God, prepared as a bride adorned for her husband. . . ." (Rev. 21:2).
 2. Modern usage: The Church is described as the new Jerusalem. It is adorned for the worship of God, and its relationship with God is seen as a gift from God.
- B. Direct quotations can often be made inclusive through the use of brackets: "A person must make his [or her] own way in this broken world."

LANGUAGE ABOUT GOD

While these guidelines are designed mainly for use in terms of language about people, care and attention should be given also to language about God in writing, speaking, and in worship. Language about God should articulate the variety and richness of God's manifestations to humankind. It should also respect the deeply personal nature of God as expressed through the Trinity. These suggestions are offered as a beginning point from which one can develop androgynous language about God.

- A. The exclusive use of either masculine or feminine pronouns for God should be avoided.
- B. Metaphors showing God's personal relationship with humans should be used, but need not be personalized with "he" or "she."
- C. A variety of sex-specific metaphors can be used: "God is the father who welcomes his son home, but she is also the woman who searches for the lost coin."

Imagination, patience, and diligence are required in order to use language which expands and enriches our understanding of God.

ENROLLMENT SUMMARY 1985-86

Divinity School Students, total 364		
313	M.Div.	(217 men, 96 women)
17	M.R.E.	(4 men, 13 women)
13	Th.M.	(8 men, 5 women)
21	Special	
	Students	(11 men, 10 women)
Graduate Division of Religious Studies, total 87		
1	M.A.	
86	Ph.D.	
Total: 451		

DENOMINATIONS REPRESENTED 1985-86

United Methodist	253	Anglican Church of Australia	2
Presbyterian Church of the USA	21	Congregationalist	1
Episcopal	15	Evangelische Kirche im Rheinland	1
Baptist	12	Methodist Church of Singapore	1
Christian Church (Disciples of Christ)	11	Original Freewill Baptist	1
Southern Baptist	10	Religious Society of Friends	1
United Church of Christ	8	United Methodist Church of Korea	1
Roman Catholic	5	United Methodist Church of Liberia	1
African Methodist Episcopal	3	United Church of Zimbabwe	1
Missionary Baptist	4	Uniting Church in Australia	1
African Methodist Episcopal Zion	2	Unaffiliated	7
Christian Methodist Episcopal	2		

GEOGRAPHICAL DISTRIBUTION 1985-86

North Carolina	185	Massachusetts	2
Virginia	29	Michigan	2
Florida	13	New Mexico	2
South Carolina	12	Oregon	2
Tennessee	12	Vermont	2
Indiana	10	Wisconsin	2
Ohio	9	Maine	1
Texas	8	Maryland	1
Georgia	7	New Jersey	1
Pennsylvania	7	North Dakota	1
New York	6	Rhode Island	1
Arkansas	5	Washington	1
Illinois	5	Wisconsin	1
West Virginia	5	Wyoming	1
Alabama	4	Foreign:	
California	3	Australia	3
Minnesota	3	Liberia	1
Mississippi	3	Korea	1
Connecticut	2	Singapore	1
Delaware	2	West Germany	2
Iowa	2	Zimbabwe	1
Kansas	2		
Louisiana	2		

INSTITUTIONS REPRESENTED

Agnes Scott College	1	Augustana College	2
Albion College	1	Australia College of Theology	1
Albright College	1	Averette College	3
Alcorn College	1	Ball State University	1
Allegheny College	1	Barrington College	1
Appalachian State University	8	Baylor University	1
Arkansas State University	1	Belmont Abbey College	1
Asbury College	4	Bethel College	1
Atlantic Christian College	13	Birmingham Southern College	4

Bluefield State College	1	Huntingdon College	4
Bonn University	1	Illinois State University	1
Boston University	1	Indiana Central University	2
Bowling Green State University	1	Indiana State University	1
Bradley University	1	Indiana University	3
Bucknell University	1	Iowa State University	2
Carleton College	1	James Madison University	1
Castleton State College	1	John Wesley College	1
Catholic University of America	2	Kent State University	1
Centenary College	1	Korea University	1
Chowan College	1	LaGrange College	2
Claflin College	1	Lambuth College	3
Cleveland State University	1	Lebanon Valley College	1
Clinch Valley College	1	Lenoir-Rhyne College	1
Colgate University	3	Livingston College	2
College of Charleston	1	Longwood College	1
College of William and Mary	4	Lynchburg College	2
Colorado College	1	McKendree College	1
Columbia Graduate School of Bible and Missions	1	McMurray College	3
Columbia Teachers' College	1	Marquette University	1
Converse College	1	Mars Hill College	3
Dartmouth College	1	Marshall University	2
Davidson College	1	Mary Baldwin College	2
DePauw University	2	Massachusetts Institute of Technology	1
Dickinson College	1	Melbourne College of Divinity	1
Duke University	22	Meredith College	3
Earlham College	2	Methodist College	9
East Carolina University	3	Miami University	1
East Tennessee State University	2	Michigan State University	1
Eastern Kentucky University	1	Middlebury College	1
Eastern Mennonite College	1	Mississippi College	1
Eckerd College	1	Montreat-Anderson College	1
Elizabeth City State College	1	Morehead State University	1
Elon College	4	Morehouse College	1
Emerson	1	Morgan State University	1
Emory and Henry College	4	Mount Saint Clare College	1
Empire State College	1	Mt. Holyoke College	1
Erskine College	1	New Hampshire College	1
Ewha Women's University	1	New Mexico State University	2
Fayetteville State University	2	North Carolina A & T State University	3
Ferrum College	1	North Carolina Central University	5
Finch College	1	North Carolina State University	5
Florida Southern College	4	North Carolina Wesleyan College	3
Florida State University	5	North Dakota State University	1
Fort Hays State University	1	North Eastern Louisiana University	1
Francis Marion College	1	Northern Illinois University	1
Franklin Teachers' College	1	Oberlin College	1
Furman University	2	Ohio State University	2
Georgetown College	1	Ohio Wesleyan University	1
Georgia Southern	1	Old Dominion University	1
Georgia State University	1	Oral Roberts University	3
Georgia Technological University	1	Oregon State University	1
Glenville State College	1	Paul Quinn College	1
Gordon College	1	Pennsylvania State University	2
Gordon-Conwell Theological Seminary	2	Pembroke State University	1
Greensboro College	3	Pepperdine University	1
Guilford College	2	Pfeiffer College	7
Hamline University	1	Piedmont College	1
Hampton College	2	Pomona College	1
Hendrix College	2	Princeton Theological Seminary	1
High Point College	7	Princeton University	2
Hollins College	1	Purdue University	1
Houghton College	2	Radford University	1
		Randolph-Macon College	1

Rhodes College	1	University of North Carolina-Wilmington	3
Rice	1	University of Notre Dame	1
Saint Augustine's College	1	University of the Pacific	2
Scarritt College	1	University of Pittsburgh	2
Sinclair Community College	1	University of Queensland	1
Southern Illinois University	1	University of South Carolina	1
Southern Methodist University	1	University of Southern Maine	1
Southeastern Baptist Theological Seminary	4	University of Southern Mississippi	1
Spelman College	1	University of Tennessee-Chattanooga	1
St. Andrews Presbyterian College	4	University of Tennessee-Knoxville	1
St. Olaf College	1	University of Texas	1
State University of New York		University of Tubingen	1
-at New Paltz	1	University of Virginia	1
-at Oneonta	1	University of Washington	1
-at Stony Brook	1	University of Western Australia	1
Swarthmore College	1	University of West Florida	1
Taylor University	2	University of Wisconsin	1
Tennessee Technical University	3	University of Wyoming	2
Texas Christian University	1	Vanderbilt University	1
Texas Tech University	1	Vassar College	2
The Citadel	1	Virginia Polytechnic Institute	
Trinity College	1	and State University	4
Tusculum College	1	Virginia State University	1
United States Coast Guard Academy	1	Virginia Wesleyan College	2
United States Military Academy		Wabash College	2
-at West Point	1	Wake Forest University	7
United Wesleyan University	1	Warren Wilson College	1
University of Akron	1	Washington State University	1
University of Central Arkansas	2	Washington University	1
University of Central Florida	1	Wayne Community College	1
University of the District of Columbia	1	Western Australian College	1
University of Florida	2	West Virginia Institute of Technology	1
University of Georgia	3	West Virginia University	2
University of Hartford	1	West Virginia Wesleyan College	2
University of Kansas	1	Western Carolina University	4
University of Louisville	1	Wheaton College	1
University of Maryland	2	Wichita State University	1
University of New Hampshire	1	Wilkes Community College	1
University of North Carolina-Chapel Hill	27	Wingate College	2
University of North Carolina-Charlotte	5	Wofford College	1
University of North Carolina-Greensboro	10	Woodrow Wilson Law School	1

ENROLLMENT 1985-86

Candidates for the Master of Divinity Degree

Adams, Brian K. (B.A., McMurry College), Abilene, Texas
Adams, Sharon LaVonda (B.A., University of North Carolina-Chapel Hill), Raeford, North Carolina
Aldershof, Wendy Wilson (B.A., Middlebury College), Rowayton, Connecticut
Amory, Michael Thomas (B.S., West Virginia University), Hurricane, West Virginia
Anderson, Howard Emory, III (B.A., Methodist College), Wilmington, Delaware
Anderson, Jerome (B.B.A., Georgia Southern College), St. Matthews, South Carolina
Andrews, William Mark (B.S., Greensboro College), Durham, North Carolina
*Armstrong, James McCoy (B.S., University of North Carolina-Chapel Hill), Hickory, North Carolina
*Armstrong, Jay Allen (B.B.A., New Mexico State University), Alamogordo, New Mexico
Askren, Carter Stittsworth (B.S., University of Georgia), Durham, North Carolina
Atkinson, David A. (B.S., Lambuth College), Halls, Tennessee
Bagwell, Robert Randall (B.A., Furman University), Easley, South Carolina
Bailey, James H., Jr. (B.A., Randolph-Macon College), Greenville, North Carolina
Baker, Charles William, Jr. (B.A., University of North Carolina-Chapel Hill), Charlotte, North Carolina
Baldwin, Penelope Lane (B.S., University of New Hampshire), Trumbull, Connecticut
Ball, Barry Douglas (B.A., The Citadel), Greensboro, North Carolina
Barber, David Arthur (B.S., M.S., Ph.D., University of Wisconsin), Raleigh, North Carolina

*Completed graduation requirements in December 1985.

Barber, William J., II (B.A., North Carolina Central University), Plymouth, North Carolina
 Barden, Mark L. (B.S., Oral Roberts University; M.A., University of Mississippi), Greensboro, North Carolina
 Bell, Luke (B.A., University of West Florida), Monroeville, Alabama
 Benefield, Rachel E. (B.S., University of Southern Mississippi), Gulfport, Mississippi
 Benjamin, Naveed G. (B.A., Duke University), Ontario, Oregon
 Bennett, Byard John (B.A., Duke University), Durham, North Carolina
 Bennett, Curtis Jay (B.A., Pfeiffer College), Salisbury, North Carolina
 Bishop, Mary Beth (B.A., Colorado College), Houston, Texas
 Bland, Linda Adams (B.A., M.A., Wake Forest University; M.A.T., Duke University), Elon College, North Carolina
 Boggs, Robert Samuel (B.A., M.A., Furman University), Greenville, South Carolina
 Bone, Jesse V., Jr. (B.A., University of North Carolina-Chapel Hill), Spring Hope, North Carolina
 Boone, Glen Paul (B.A., Rice University), Houston, Texas
 Bowden, Julia Webb (B.A., Huntingdon College), Atlanta, Georgia
 Bradley, Neil Anthony (B.S., University of Maryland; M.Ed., University of Virginia), Timberlake, North Carolina
 Briggs, Edwin Albert (B.A., Emory and Henry College), Roanoke, Virginia
 Broadway, Katherine Jean (B.S., Tennessee Technological University), Nashville, Tennessee
 Brown, Arthur M. (B.A., Cleveland State University), Cleveland, Ohio
 Brown, Boyd J. (B.A., Swarthmore College), Annandale, Virginia
 Brown, James Stanley (B.A., University of Central Florida), Mentone, Alabama
 Brown, Lisa Ann (B.A., Elon College), Graham, North Carolina
 Burchill, Timothy William (B.A., DePauw University; M.A., Miami University), Oak Park, Illinois
 Burgess, Susan Lucille (B.A., Methodist College), Durham, North Carolina
 Burns, Columbus B. (B.S., Georgia State University; J.D., Woodrow Wilson Law School), Camilla, Georgia
 Burton, Mary Elizabeth (B.S., Atlantic Christian College), Fayetteville, North Carolina
 Basic, Anthony C. (B.A., Virginia Wesleyan College), Mathews, Virginia
 Butler, Frank (B.S., Francis Marion College), Florence, South Carolina
 Campbell, Kathleen Dall (B.A., Warren Wilson College), Asheville, North Carolina
 Carlson, Scott D. (B.A., North Dakota State University), Bismarck, North Dakota
 Cartwright, Thomas Kevin (B.A., Pennsylvania State University), Bellefonte, Pennsylvania
 Chalaron, Janice Melbourne (B.A., M.S., University of North Carolina-Chapel Hill), Durham, North Carolina
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 Cirksena, Randall Jay, Jr. (B.A., St. Olaf College), Eagan, Minnesota
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 Clarke, James C. (B.A., Paul Quinn College; M.S., University of Texas), Dallas, Texas
 Clayton, Richard Thomas (B.A., Atlantic Christian College; M.R.E., Southeastern Baptist Theological Seminary), Henderson, North Carolina
 Cleveland, Robert E., II (A.B., Dartmouth College), Cary, North Carolina
 Coble, Christopher Lee (B.A., Wabash College), Indianapolis, Indiana
 Cohoon, Robert Neil (B.A., Houghton College), Fillmore, New York
 Cole, Eric DeWayne (B.S., Morehouse College), Memphis, Tennessee
 Collier, Milton Bailey, Jr. (B.A., University of North Carolina-Chapel Hill), Lucama, North Carolina
 Collins, Gerald David (B.S., Western Carolina University), Burlington, North Carolina
 Comfort, James M. (B.S., Mississippi College), Pearl, Mississippi
 Conger, Steven Marshall (B.A., Northern Illinois University), Downers Grove, Illinois
 Conway, William D. (B.A., Hendrix College), Little Rock, Arkansas
 Coon, Cynthia Elizabeth (B.A., Mount Holyoke College), St. Albans, Vermont
 Copeland, Jennifer Elaine (B.A., Duke University), Spartanburg, South Carolina
 Cox, Christopher William (B.A., Ohio Wesleyan University), Rocky River, Ohio
 Creech, Sharon Strickland (B.F.A., University of North Carolina-Greensboro), High Point, North Carolina
 Criswell, Reed (B.A., McMurry College), Plainview, Texas
 Crocker, Amy Elizabeth (B.A., Carleton College), Falmouth, Massachusetts
 Daughety, Ralph Morgan (B.A., Atlantic Christian College), Kinston, North Carolina
 *Davidson, Mary Gage (B.A., Davidson College), Davidson, North Carolina
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 Davis, Cynthia Lee (B.A., Wichita State University; J.D., Catholic University of America), West Middlesex, Pennsylvania
 Davis, Eldrick Ray (B.A., St. Andrews Presbyterian College), Maxton, North Carolina
 DeLoach, Travis Lee (B.A., Averett College), Danville, Virginia
 Derflinger, James Michael (B.S., Longwood College), Front Royal, Virginia

Deshield, McKinley Alfred (B.S., North Carolina A&T State University), Monrovia, Liberia
 Desilva, Earlston Eugene (B.S., Hampton University), Southampton, Bermuda
 Dills, William Rey (B.A., High Point College), High Point, North Carolina
 Dominguez, Joseph N. (B.S., Ohio State University), Toledo, Ohio
 Donakey, Joseph Michael (B.A., Centenary College), Shreveport, Louisiana
 Dudley, Edith Louise (B.A., M.S., University of North Carolina-Chapel Hill), Fairfield, North Carolina
 Durham, Donnie Benton (B.S., Appalachian State University), Pelham, North Carolina
 Earle, Patty Ann (B.A., Emerson College; M.A., Kent State University; Ph.D., University of North Carolina-Chapel Hill), Greensboro, North Carolina
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 Ebert, B. Wayne (B.S., Indiana University), Cocoa Beach, Florida
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 Edwards, Swindell (B.S., Saint Augustine's College), Durham, North Carolina
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 Ehrlich, Timothy Walter (B.A., State University of New York at Stony Brook), Durham, North Carolina
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 Fenner, Jack L. (B.S., M.A., Marshall University), Bennettsville, South Carolina
 Fitzgerald, John Crockett (B.S., Appalachian State University), Monroe, North Carolina
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 Fonger, Gilbert W. (B.S., U.S. Coast Guard Academy), Lowell, Michigan
 Foster, Ronald Keith (B.A., Princeton University), Dresher, Pennsylvania
 Fox, Doris T. (B.A., Fayetteville State University), Sanford, North Carolina
 Fountain, Marvin E. (B.A., Morgan State University), Baltimore, Maryland
 Franklin, John Keith (B.S., Appalachian State University) Forest City, North Carolina
 Franklin, Kenneth Mike (B.S., United States Military Academy), Anderson, South Carolina
 Funkhouser, Deidre Jo (B.A., Indiana Central University), Muncie, Indiana
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 Gates, Richard Phillip (B.A., University of Georgia), Atlanta, Georgia
 Gilland, Michelle Colleen (B.A., Meredith College), Raleigh, North Carolina
 Gillikin, Haywood Wrenn (B.A., East Carolina University; M.A., University of North Carolina-Chapel Hill), Goldsboro, North Carolina
 Glass, Jimmy C. (B.A., Lambuth College), Covington, Tennessee
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 Graves, Elizabeth Lorraine (B.A., Birmingham Southern College), Tampa, Florida
 Green, Martin Klapp, Jr. (B.A., North Carolina State University), Raleigh, North Carolina
 Greenwood, Jane Benfield (B.A., Pfeiffer College), Newland, North Carolina
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 Halloran, Timothy Wyant (B.A., West Virginia Institute of Technology), Talcott, West Virginia
 Hamilton, Terry Jo (B.A., University of North Carolina-Chapel Hill), Greensboro, North Carolina
 Hardy, Sallye Ann (B.A., Asbury College), Chatham, Virginia
 Hargrove, Raymond Wayne (B.A., East Carolina University), Henderson, North Carolina
 Harless, Okey B., Jr. (B.A., Bluefield State College), Bluefield, West Virginia
 Harner, James R. (B.A., Castleton State College), Rutland, Vermont
 Harper, Diane Patrice (B.A., Livingston College), High Point, North Carolina
 Heitzenrater, Nancy Ruth (B.A., Florida Southern College), Clermont, Florida
 Heitzenrater, Warren T. (B.A., Duke University), Orlando, Florida
 Helton, Ricky Damon (B.A., North Carolina Central University), Durham, North Carolina
 Hicks, Mark Carter (B.A., University of North Carolina-Chapel Hill), Jamestown, North Carolina
 Hinson, Maurice Evans (B.A., Huntingdon College), Tallahassee, Florida
 Hite, Haskel Paul, Jr. (B.S., East Tennessee State University), Kingsport, Tennessee

Hobson, David Hughes (B.A., Appalachian State University), Albemarle, North Carolina
Hodnett, Moses Edmon, Jr. (B.S., M.S., North Carolina A&T University), Yanceyville, North Carolina
Holliday, William Ervin (B.A., University of Florida), Carrboro, North Carolina
Hollowell, Nancy Susan (B.A., Atlantic Christian College), Cary, North Carolina
Howard, John Frank (B.A., Greensboro College), Greensboro, North Carolina
Hudson, Bryant Ashley (B.A., M.B.A., University of North Carolina, Greensboro), Raleigh, North Carolina
Hudson, Pamela Jo (B.S., Atlantic Christian College), Roanoke Rapids, North Carolina
Isenhour, Gregory Lee (B.A., Asbury College), Concord, North Carolina
Jackson, Howard B. (B.S., Georgia Technological University), Waleska, Georgia
Jeffries, Henry D. (B.A., Boston University), High Point, North Carolina
Jenks, Gregory Keith (B.S., B.A., University of North Carolina-Greensboro), Graham, North Carolina
Jent, Larry Gene (B.S., Southern Illinois University), Red Cross, North Carolina
Johannessen, Larry Norman (B.A., Houghton College), Durham, North Carolina
Johnson, Anne Louise (B.S., Duke University), Indianapolis, Indiana
Johnson, Joyce Eleanor (B.A., Averett College), Danville, Virginia
Johnson, Mary Victoria (B.A., Florida Southern College), Boynton Beach, Florida
Johnson, Melissa Ann (B.A., College of William and Mary), Richmond, Virginia
Johnson, Sarah Lee (A.B., Duke University; M.S.W., The Catholic University of America), Alexandria, Virginia
Jones, Charles Brewer (B.A., Morehead State University), Durham, North Carolina
Jones, Diana Hollis (B.A., University of North Carolina-Chapel Hill), Asheboro, North Carolina
Jones, Rockwell Frank (B.A., Hendrix College), Pine Bluff, Arkansas
Joyner, Albert Lewis, Jr. (A.B., Pfeiffer College), Lexington, North Carolina
Kayler, Claude Jackson (B.A., University of North Carolina-Chapel Hill), Raleigh, North Carolina
Kiser, Howard Stephen (B.A., Appalachian State University), Lincolnton, North Carolina
Klett, Randall Blair (B.A., State University of New York-Oneonta), Norwich, New York
Kolm, Charnell C. (B.S., University of Wyoming), Laramie, Wyoming
Krause, Gail Frances (B.A., Southern Methodist University), Arlington, Virginia
Lackey, Duke Calwell (B.S., Atlantic Christian College), Siler City, North Carolina
Lambert, Anthony E. (B.A., Appalachian State University), Pfafftown, North Carolina
Lamm, K. Alan (B.A., University of North Carolina-Greensboro), Wilson, North Carolina
Langley, Delores Anne (B.A., University of North Carolina-Chapel Hill), New Bern, North Carolina
Leebrick, Bland Allen, Jr. (B.A., University of North Carolina-Greensboro), Greensboro, North Carolina
Lentz, John William (A.B., Albright College), Philadelphia, Pennsylvania
Leslie, Paul Douglas (Th.B., Piedmont Bible College), Raleigh, North Carolina
Lockett, Deborah Denise (B.A., Akron University), Akron, Ohio
Long, Duane Stephen (B.A., Taylor University), Wabash, Indiana
Long, Rebecca Oakes (A.B., Eastern Kentucky University), La Mesa, California
Loy, Samuel White (B.A., Elon College), Burlington, North Carolina
Lust, Jeff Alan (B.S., McMurry College), Littlefield, Texas
Lykins, Mark Elvin (B.S., Georgetown College; M.S.W., Ohio State University), Farmersville, Ohio
Lynch, Leonzo Daniel (B.A., University of North Carolina), Durham, North Carolina
McCants, Gene Allen (B.S., Western Carolina University), Albemarle, North Carolina
McClendon, Kelly D. (B.A., New Mexico State University), Las Cruces, New Mexico
McFarland, Dena Jo (B.A., James Madison University), Harrisonburg, Virginia
McGuire, Judith Ann (B.A., Indiana Central University), Indianapolis, Indiana
McHenry, John Newell (B.S., DePauw University; M.S., Massachusetts Institute of Technology), Raleigh, North Carolina
McLellan, Martha Faith (B.A., Wake Forest University), High Point, North Carolina
McMillan, Samuel Duncan, III (B.A., University of North Carolina-Chapel Hill), Cary, North Carolina
McNamara, Anne N. (B.A., Marquette University), Chapel Hill, North Carolina
McNeil, Tracy Anne (B.A., College of William & Mary), Springfield, Virginia
McPherson, Charles Kris (B.S., Ball State University), Portland, Indiana
Malloy, David Ophanalia (B.A., Pembroke State University), Laurinburg, North Carolina
Mangum, Mark Evans (B.S.M., Florida Southern College), Deerfield Beach, Florida
Mann, Jo Ann (B.S., Florida State University), Tallahassee, Florida
*Marshall, Andrew Murdock (B.A., University of North Carolina-Wilmington), Elizabethtown, North Carolina
Marshall, Jay Wade (B.A., Guilford College), Siler City, North Carolina
Marshall, Jeffrey James (B.A., Taylor University), Dayton, Indiana
Martin, Richard J. (B.A., Marshall University), Warren, Pennsylvania
Mashburn, Mark Dwight (B.A., High Point College), Winston-Salem, North Carolina
Mason, Deval Michel (B.S., Fort Hays State University), Moscow, Kansas
Mason, Glenn Eldridge (B.A., Atlantic Christian College), Goldsboro, North Carolina
Matthews, Tony Harold, (B.A., High Point College), Vale, North Carolina

Matzko, David Matthew (B.A., High Point College), Chicopee, Massachusetts
 Matzko, Sandy-Amabel (B.A., High Point College), Chicopee, Massachusetts
 May, Raegan V. (B.S., Texas Tech University) Sudan, Texas
 Maykus-Knaplund, Janet Lee (B.A., Texas Christian University), Lancaster, Texas
 Mayo, Barbara Boyd (B.S., Florida State University), Ft. Walton Beach, Florida
 Mayo, David Lister (B.S., Florida State University), Tallahassee, Florida
 Medlock, Scott Angier (B.A., University of Notre Dame; J.D., Notre Dame Law School), Orlando, Florida
 Meeks, Donald Lee (B.A., McKendree College), Fairfield, Illinois
 Melgreen, Julia Atkinson (B.A., Augustana College), Rock Island, Illinois
 Messick, Thomas Ralph (B.A., Atlantic Christian College), Wilson, North Carolina
 Milford, Brian Kent (B.S., Iowa State University), Council Bluffs, Iowa
 Miller, Joanna Claire (B.S., Radford University), Durham, North Carolina
 Miller, Mark Brian (B.A., Hamline University), Eagan, Minnesota
 Mitchell, Ted J. (B.A., Augustana College), Champaign, Illinois
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 Morgan, Molly Dotson (B.A., Agnes Scott College; M.F.A., University of North Carolina-Greensboro), Reidsville, North Carolina
 Morris, Mark Lee (B.A., University of Kansas), Topeka, Kansas
 Morrison, Billie Joan Stubblefield (B.A., University of North Carolina-Greensboro), Greensboro, North Carolina
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 Mullen, Roderic Lynn (A.B., Duke University), Durham, North Carolina
 Mullins, Herbert Rae (B.S., Clinch Valley; M.A., East Tennessee State University), Wytheville, Virginia
 Murphy, James Olen, Jr. (B.A., Mars Hill College), Durham, North Carolina
 Mustard, Kimberly Kyle (B.S., Virginia Polytechnic Institute and State University), Pearlsburg, Virginia
 *Nance, Catherine Clark (B.S., University of Tennessee-Chattanooga) Chattanooga, Tennessee
 Nelson, Luke Richard (B.A., Oberlin College), Basking Ridge, New Jersey
 Newman, Brenda Motley (B.A., University of North Carolina-Greensboro), Durham, North Carolina
 Newman, Donald Alan (B.A., University of North Carolina-Chapel Hill), Lawndale, North Carolina
 Newton, Susan Lee (B.A., Columbia College), Mullins, South Carolina
 Nyajeka, Tumani Sheila Mutasa (B.A., Birmingham-Southern College), Harare, Zimbabwe
 O'Connell, Andrea Viola (B.A., Atlantic Christian College), Durham, North Carolina
 Ollis, Jock Pike (B.A., University of North Carolina-Chapel Hill), Marion, North Carolina
 O'Neal, Mike Brent (B.S., University of Wyoming), Laramie, Wyoming
 Overman, John Frederick (B.A., Lebanon Valley College), Fort Atkinson, Wisconsin
 Owens, Judy Kay (B.A., Eastern Mennonite College), Matthews, Virginia
 Parker, Robert Joe, Jr. (B.A., Baylor University), Arlington, Texas
 Parsons, Charles Scott (B.A., LaGrange College), Stone Mountain, Georgia
 Parsons, Mary Jane (B.A., La Grange College), Thomasville, Georgia
 *Patterson, Jeffrey Scott (B.A., Belmont Abbey College), Gastonia, North Carolina
 Perry, Stephen Wayne (B.A., University of Southern Maine), South Portland, Maine
 Petrillo, Gary Stephen (B.A., State University of New York-New Paltz), Ossining, New York
 Philbeck, Freda L. (B.A., Atlantic Christian College), Charlotte, North Carolina
 Pinzino, Jane Marie (B.A., Colgate University), Durham, North Carolina
 Potter, Michael R. (B.A., Princeton University; J.D., West Virginia University College of Law), Chapel Hill, North Carolina
 Powell, Lena Freeman (B.A., North Carolina A&T State University), Delco, North Carolina
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 Roberts, Michael L. (B.A., University of Central Arkansas), Little Rock, Arkansas
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 Rogers, Patricia Alice (B.A., Converse College), Conyers, Georgia
 Rogers, Timothy Julian (B.A., J.D., University of South Carolina), Greeleyville, South Carolina
 Rose, Edwin Alan (B.A., Methodist College), Pittsboro, North Carolina
 Rudd, Karen J. (B.S., High Point College), High Point, North Carolina
 Russell, Linda Ann (B.A., North Carolina Central University), Durham, North Carolina

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 Schultz, Sara Margot (B.A., Earlham College), Little Rock, Arkansas
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 Shields, Robert Strong (B.A., University of Florida), New Bern, North Carolina
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 Sittason-Stark, Paul Cushman (B.A., Duke University), Durham, North Carolina
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 Skinner, Robert Ogle (B.S., Pennsylvania State University), Durham, North Carolina
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 Smith, Amy Joanna (B.A., Duke University), Durham, North Carolina
 Smith, Carolyn Reed (B.S., Duke University), Sanford, North Carolina
 Smith, Christopher Glenn (B.A., Pfeiffer College), Asheboro, North Carolina
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 Smith, Samuel Ralph (B.A., Tusculum College), Greeneville, Tennessee
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 Spencer, Glenn Morton (B.A., Elon College), Ramseur, North Carolina
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 Stephenson, Thomas Kash (B.A., Atlantic Christian College), Raleigh, North Carolina
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 Sugg, John Brinkley (B.A., University of North Carolina-Chapel Hill), New Bern, North Carolina
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 Tyson, Rita Thorpe (B.A., Spelman College), Durham, North Carolina
 Un, Won Hyung (B.A., Methodist College), Seoul, Korea
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 Vickers, Mark Norman (B.A., Earlham College), Hickory, North Carolina
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 Wall, Carrie Yearick (B.A., Wingate College), Winter Park, Florida
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 Walton, Lindsay Vernon (B.S., Emory & Henry College), Charlottesville, Virginia
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 Warren, Donnie Ray (B.S., Florida Southern College), Jacksonville, Florida
 Warrick, Donald Marvin, Jr. (B.A., Virginia Wesleyan College), Arlington, Virginia
 Washington, Scott Cameron (B.A., Illinois State University), Boston, Massachusetts
 Watford, Troy Scott (B.A., Wofford College), Spartanburg, South Carolina
 Watkins, James Patterson (B.S., North Carolina State University), Rocky Mount, North Carolina
 Watwood, Harry Lee, III (A.B., Pfeiffer College), Pine Hall, North Carolina
 Webb, Daniel (B.A., Livingstone College), Massillon, Ohio
 Weems, Robin (B.S., Mary Baldwin College), Jackson, Mississippi
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Wesley, Anton T., (B.S. Elizabeth City State University), Greenville, North Carolina
 Westfall, Joseph Michael (A.B., Glenville State College), Parkersburg, West Virginia
 White, Burton Ellis (A.S., Chowan College; B.S., Ferrum College), South Boston, Virginia
 White, James Willard (Th.B., John Wesley College; B.A., Asbury College; M.A., Wake Forest University), Morganton, North Carolina
 Whitmire, Adrian Julian, Jr. (B.S., Birmingham-Southern College), Leeds, Alabama
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 Wilkins, John J., Jr. (B.S., New Hampshire College), Robersonville, North Carolina
 *Williams, William Franklin (A.B., Pfeiffer College), Sanford, North Carolina
 Wilson, Samuel Benjamin (B.A., Bradley University; M.A., University of Hartford), Hampton, Virginia
 Willis, Willis (B.A., University of the District of Columbia), Chapel Hill, North Carolina
 Wingo, Brian Wayne (B.A., Methodist College), Oxford, North Carolina
 Wingo, Norma Walters (B.A., Methodist College), Oxford, North Carolina
 Wise, Gilliam Perry (B.A., Methodist College), Godwin, North Carolina
 Wise, Joyce R. (B.A., North Carolina Wesleyan College), Jacksonville, North Carolina
 Withrow, Lisa Renee (B.A., Bucknell University), McDonald, Ohio
 Wright, Jeffrey Wayne (B.A., Emory & Henry College), Saltville, Virginia
 Wright, Lea Stanley, Jr. (B.A., Asbury College), Ringgold, Virginia
 Wyant, David Allen (B.A., West Virginia University), Holly Springs, North Carolina
 Yim, Robin Lawrence (B.S., Oregon State University), Corvallis, Oregon
 Young, Banton Johnson (B.A., St. Andrews Presbyterian College), Arlington, Virginia

Candidates for the Master of Religious Education Degree

Armstrong, Barbara Keegan (B.A., Meredith College), Raleigh, North Carolina
 Clegg, Judith Ann (B.A., Mary Baldwin College), Granville, Ohio
 Elliot, Sara Carroll (B.A., University of North Carolina-Charlotte), Charlotte, North Carolina
 Hall, Karen B. (B.S., Lambuth College), Huntingdon, Tennessee
 McCaughan, Susan Boutwell (A.B., M.Ed., Duke University), Durham, North Carolina
 McGeady, JaYong Chang (B.S. Ewha Women's University; B.S., Guilford College), Brown Summit, North Carolina
 Markatos, Cathy Milner (B.A., Vassar College), Pittsboro, North Carolina
 Mitchell, Craig Duncan (B.E., University of Queensland; Y.E.A. Dip., Alcorn College), Brisbane, Australia
 Ray, William James (Dip.T., Frankston Teachers College; B.Ed., Western Australian College of Theology; Th.Dip., Australian College of Theology), Queensland, Australia
 Reuter, Melanie Childress (B.A., Mars Hill College), Ravenswood, West Virginia
 Romeiser, Joanie Gail (A.A., Sinclair Community College; B.A., Otterbein College), Dayton, Ohio
 Schoelkopf, Laurie Ellen (B.S., Western Carolina University), Raleigh, North Carolina
 Smith, Bonnie Gail (B.S., Wingate College), Indian Trail, North Carolina
 Tate, Rebecca Ann (B.A., Birmingham-Southern College), Richmond, Virginia
 Vernam, Amy Allen (B.A., Huntingdon College), Durham, North Carolina
 Witham, Edward Peter (B.A., University of Western Australia; B.D., Melbourne College of Divinity), Perth, Western Australia

Candidates for the Master of Theology Degree

Carter, Pamela Barrow (B.A., Wake Forest University; M.R.E., Duke University), Kernersville, North Carolina
 Eli, George (B.Div., Trinity Theological College), Singapore, Republic of Singapore
 Geis, Scott David (B.A. Bethel College; M.Div., Bethel Theological Seminary), St. Paul, Minnesota
 Griffith, Jack Garrison, Jr. (B.A., High Point College; M.Div., Gordon-Conwell Theological Seminary), Cornelius, North Carolina
 Hunt, David Earl (B.A., North Carolina State University; M.Div., Duke Divinity School), Pembroke, North Carolina
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 McDuff, Doyle Stephen (B.A., University of North Carolina-Chapel Hill; M.Div., Duke Divinity School), Greensboro, North Carolina
 McFarland, Gary William (B.A., B.S., University of North Carolina-Charlotte; M.Div., Southeastern Baptist Theological Seminary), Raleigh, North Carolina
 Meador, Keith G. (B.A., Vanderbilt University; M.D., University of Louisville), Durham, North Carolina
 Robinson, Heidi Campbell (B.A., College of William & Mary; M.Div., Duke Divinity School), Virginia Beach, Virginia
 Scanlan, Carla J. (B.S., Indiana University; M.A., Florida State University; M.Div., Duke Divinity School), Fayetteville, North Carolina

- Simonetti, Ethel Chaffin (A.B., University of Georgia; M.Div., Duke Divinity School), Durham, North Carolina
- Wilson, Marion Heaton (B.A., Vassar College; M.Div., Duke Divinity School), Chapel Hill, North Carolina
- Wilson, Richard Mosher (B.A., University of North Carolina-Chapel Hill; M.Div., Columbia Graduate School of Bible and Missions), Chapel Hill, North Carolina

Special Students

- Baldwin, Brit Forbes (B.A., College of Charleston; M.Div. Southeastern Seminary), Mebane, North Carolina
- Currie, Madeline Gray (A.B., MSLS, University of North Carolina-Chapel Hill), Chapel Hill, North Carolina
- Dowling, Willis Irvin (A.A., Montreat-Anderson College; B.A., Gordon College; M.Div., Gordon-Conwell Theological Seminary), Suffolk, Virginia
- Freedman, Sarah S. (B.A., Allegheny College; M.A., University of Pittsburgh), Hillsborough, North Carolina
- Inskeep, Robert Gail (Virginia Polytechnic Institute and State University), Raleigh, North Carolina
- Lucier, Ruth-Ellen Miller (B.A., University of the Pacific; Ph.D., University of Maryland), Bynum, North Carolina
- Miller, Patrice A. C. (B.A., Empire State College), Steward Manor, New York
- Scholl, Diana F. (B.S., East Tennessee State University); M.A., University of North Carolina-Chapel Hill), Chapel Hill, North Carolina
- Spencer, Jon Michael (B.A., Hampton Institute; M.A., Ph.D., Washington University) Durham, North Carolina
- Thomas, Al Franklin, Jr. (B.A., St. Andrews Presbyterian College; M.Div., Princeton Theological Seminary) Durham, North Carolina
- Unterkötter, Bernhard (University of Bonn, University of Tübingen), Leverkusen, Federal Republic of Germany
- Walker, Elaine Virginia (A.B., College of William & Mary; M.Div., Duke Divinity School), Arlington, Virginia

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Information and Regulations

Trinity College of Arts and Sciences
The School of Engineering



THE DUKE STUDENT HONOR COMMITMENT

A unique aspect of a liberal education is its attempt to instill in the student a sense of honor and high principles that extends beyond academics. An essential feature of Duke University is its commitment to an atmosphere of integrity and ethical conduct. As a student of Duke University I accept as my personal responsibility the vigorous maintenance of high standards of honesty, truth, fairness, civility, and concern for others.

My devotion to integrity establishes that I will not cheat in academic work, and that I will adhere to the established and required community code of conduct. According to the dictates of my own conscience, I will report behavior in violation of such established standards. In addition, and beyond the requirements of any code or law, I confirm my own commitment to personal honor and integrity in all matters large and small. Even though the ideal of honor is an abstract one, by implementing this ideal, I join the men and women of Duke University in making the concept of honor a reality.

The Duke Student Honor Commitment was developed by students of the Class of 1982, approved through a student-wide referendum and presented to President Sanford at graduation (May, 1982). The President's Honor Council was created the following year to promote and represent the ideals embodied by the Honor Commitment.

The Duke Student Honor Commitment differs from other university honor codes in one fundamental way: it is strictly a personal commitment that is not enforceable by any judicial or regulatory action. Each student is responsible for thoughtfully determining his or her own concept of honor and then adhering to that standard according to his or her conscience. It is hoped that your concept of honor will develop and mature during your Duke career.

It is the goal of the President's Honor Council to help establish and reinforce the Duke Student Honor Commitment as a cherished tradition of Duke University. We trust that the accumulation of individual acceptances of the Honor Commitment will achieve this goal.

bulletin of
Duke University
1986-87

Information and Regulations

Trinity College of Arts and Sciences
The School of Engineering

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University Calendar, 1986-87

Fall, 1986

August	
27	Wednesday. Orientation begins. Assemblies for all new undergraduate students.
September	
1	Monday, 8:00 A.M. fall semester classes begin.
2	Tuesday, 4:00–6:00 P.M. Drop/Add begins, Intramural Building.
3–12	Wednesday, Sept. 3 through Friday, Sept. 12, weekdays, 8:30 A.M.–12:30 P.M. and 2:00–4:00 P.M., Drop/Add continues, 103 Allen Building.
October	
17	Friday. Last day for reporting midsemester grades.
17	6:00 P.M.. Fall break begins.
22	Wednesday, 8:00 A.M. Classes resume.
November	
10–13	Monday–Thursday. Registration for spring semester, 1987, 103 Allen Building.
26	Wednesday, 6:00 P.M. Thanksgiving recess begins.
December	
1	Monday, 8:00 A.M. Classes resume.
11	Thursday, 6:00 P.M. Fall semester classes end.
12–14	Friday–Sunday. Reading period.
14	Sunday. Founder's Day.
15	Monday. Final examinations begin.
20	Saturday. Final examinations end.

Spring, 1987

January	
5	Monday. Orientation begins.
7	Wednesday. Registration and matriculation of new undergraduate students.
8	Thursday, 8:00 A.M. Spring semester classes begin.
9	Friday, 4:00 P.M.–6:00 P.M. Drop/Add, Intramural Building
12–16	Monday–Friday, 8:30 A.M.–12:30 P.M. and 2:00 P.M.–4:00 P.M. Drop/Add, 103 Allen Building.
February	
20	Friday. Last day for reporting midsemester grades.
March	
6	Friday, 6:00 P.M. Spring recess begins.
16	Monday, 8:00 A.M. Classes resume.
30–April 1	Monday–Wednesday. Registration for fall semester, 1987, and beginning of registration for summer terms.
April	
22	Wednesday, 6:00 P.M. Undergraduate classes end.
23–26	Thursday–Sunday. Undergraduate reading period.
27	Monday. Final examinations begin.
May	
2	Saturday. Final examinations end.
9	Saturday. Commencement exercises begin.
10	Sunday. Graduation exercises. Conferring of degrees.

University Administration

General Administration

H. Keith H. Brodie, M.D., *President*
Phillip A. Griffiths, Ph.D., *Provost*
William G. Anlyan, M.D., D.Sc., *Chancellor for Health Affairs*
Eugene J. McDonald, LL.M., *Senior Vice-President, Administration, and University Counsel*
William J. Griffith, A.B., *Vice-President for Student Affairs*
John J. Piva, B.A., *Vice-President for Alumni Affairs and Development*
William L. Green, Jr., A.B., *Vice-President for University Relations*
Joel L. Fleishman, LL.M., *Vice-President*
Stephen Cannada Harward, A.B., C.P.A., *Treasurer and Assistant Secretary*
J. Peyton Fuller, A.B., *Associate Vice-President and Corporate Controller*
Roger L. Marshall, A.B., *Secretary of the University*
Andrew G. Wallace, M.D., *Vice-Chancellor for Health Affairs*
Charles E. Putman, M.D., *Vice-Chancellor for Health Affairs*
Charles T. Clotfelter, Ph.D., *Vice-Chancellor of the University*
Patricia C. Skarulis, M.A., *Vice-Chancellor for Information Systems*
R. James Henderson, M.Ed., *Associate Vice-President and Business Manager*

Trinity College of Arts and Sciences

Richard White, Ph.D., *Dean*
Albert F. Eldridge, Ph.D., *Associate Dean*
Virginia Bryan, Ph.D., *Assistant Dean*
Martina Bryant, Ed.D., *Assistant Dean*
Elizabeth S. Nathans, Ph.D., *Assistant Dean*
Mary Nijhout, Ph.D., *Assistant Dean*
Brian Q. Silver, Ph.D., *Assistant Dean*
Gerald L. Wilson, B.D., Ph.D., *Assistant Dean*
Ellen W. Wittig, Ph.D., *Assistant Dean*

The School of Engineering

Earl H. Dowell, Ph.D., *Dean*
Marion L. Shepard, Ph.D., *Associate Dean*
J. Thomas McMurray, B.S.E., M.S., Ph.D., *Associate Dean and Director of External Affairs*

Student Affairs

William J. Griffith, A.B., *Vice-President for Student Affairs*

Counseling and Psychological Services

Jane Clark Moorman, M.S.W., ACSW, *Clinical Social Worker and Director*
John C. Barrow, Ed.D., ABPP, *Psychologist*
Tina D. Bell, M.S.W., ACSW, *Clinical Social Worker*
Rolffs S. Pinkerton, Ph.D., ABPP, *Psychiatrist*
Kenneth Rockwell, M.D., *Psychiatrist*
Elinor T. Roy, M.S.W., ACSW, *Clinical Social Worker and Assistant Director*
Joseph E. Talley, Ph.D., *Psychologist*

Cultural Affairs

Susan L. Coon, M.A., *Director*

International House

Brian Q. Silver, Ph.D., *Director and International Adviser*

Minority Affairs

Caroline L. Lattimore, Ph.D., *Dean*

Placement Services

Patricia O'Connor, Ed.D., *Director*
Johnnie Lawrence, *Assistant Director*
Laurence P. Maskel, Ph.D., *Assistant Director*
Lillian Lee, M.S.Ed., *Placement Officer*
Amanda S. McBride, M.Ed., *Career Counselor*

Religious Life

William H. Willimon, Ph.D., *Minister to the University*
Nancy A. Ferree, M.Div., *Assistant Minister to the University*
Mary Parkerson, A.B., *Chapel Development Officer and Administrative Assistant to the Minister to the University*
George Drum, Ph.D., *Inter-Varsity Leader*
John Wall, Ph.D., *Chaplain to Catholic Students*
Velma Ferrell, B.D., *Chaplain to Baptist Students*
Hubert F. Beck, M.Div., *Chaplain to Lutheran Students*
Frank A. Fisher, M.A., *Chaplain to Jewish Students*
Earl H. Brill, Ph.D., *Chaplain to Episcopal Students*
G. Ronald Patton, B.S., M.Div., *Chaplain to Methodist Students*
John Hamilton, M.A., *Navigators Staff Person*
Douglas Humphrey, B.S., *Campus Crusade for Christ Representative*

Residential Life

Richard L. Cox, M.Div., Th.M., Ed.D., *Dean*
Ella E. Shore, M.R.E., M.A., *Associate Dean*
David W. Jamieson Drake, M.Div., *Assistant Dean*
Leslie Monfort Marsicano, M.Div., *Assistant Dean*
Frank H. McNutt, B.A., *Assistant Dean*
Charles M. VanSant, M.Div., *Assistant Dean*
Benjamin Ward, Ph.D., *Assistant Dean*
Barbara L. Bushman, A.B., *Coordinator, Student Housing*

Student Activities

Homai McDowell, M.M.S., D.B.A., *Director*
Adande Washington, A.B., M.A.T.S., *Financial Manager*

Student Health

Howard J. Eisenson, M.D., *Director*
Robert Gringle, B.A., B.S., M.Ed., *Assistant Director*
Penny Sparacino, R.N., *Nursing Supervisor, University Infirmary*

Student Life

Suzanne Wasiolek, M.H.A., *Dean*
W. Paul Bumbalough, A.B., *Assistant Dean*

University Union

Jake Phelps, B.A., *Director*
Peter Coyle, A.B., *Associate Director*
Krista Cipriano, B.F.A., *Coordinator, Arts and Crafts Center*
Gay Llewellyn, *Program Adviser*
Gloria Wagner, *Financial Adviser*

Student Services



A number of resources within the University are relied upon by undergraduate students for counseling and information relating to both academic and personal matters. In addition, the University provides a variety of services for students in areas such as health care and postgraduate employment. Some of these resources and services are available through the office of the individual schools and college; others are provided by University-wide offices and departments. For additional information consult the *Bulletin of Undergraduate Instruction*.

Administrative Offices of Schools and Colleges

TRINITY COLLEGE OF ARTS AND SCIENCES

The Dean of Arts and Sciences and the Dean of Trinity College, Dr. Richard White. The Dean of Arts and Sciences acts as the University's chief academic, budget, and executive officer for the Arts and Sciences departments (some thirty in number) and for selected interdisciplinary problems.

The Dean is responsible for developing and maintaining the quality of the academic programs in Arts and Sciences in consultation with appropriate faculty and students and for planning and organizing efforts to generate funds for the operation of the departments and programs. The Dean recommends to the Provost policies and budget needs concerning academic affairs. He implements the policies and acts as chief budget officer in relation to them.

The Dean is the University's executive officer for the academic affairs of undergraduate students in Trinity College of Arts and Sciences, and he recommends to the Provost policies concerning such affairs. The Dean presides at meetings of the UFCAS. He is assisted in executing these responsibilities by the Associate Dean of TCAS and the Assistant Deans of TCAS.

The Associate Dean of the College, Albert F. Eldridge. The Associate Dean has a broad range of responsibilities. He primarily assists the Dean in developing and maintaining the quality of all academic advising programs for undergraduates. In consultation with the Assistant Deans of the college and the Directors of Undergraduate Studies in the various departments and programs of Arts and Sciences, the Associate Dean recommends to the Dean administrative policies and budget needs of the college. The Associate Dean also participates in the work of selected University and UFCAS committees, reviewing programs and policies within the jurisdiction of the college. As review officer of the college, the Associate Dean acts on any appeals of the Assistant Deans of the college, as well as all academic appeals of the Undergraduate Judicial Board.

Assistant Deans Virginia Bryan, Martina Bryant, Elizabeth Nathans, Mary Nijhout, Brian Silver, Gerald Wilson, Ellen Wittig. The Assistant Deans are often referred to as the students' "academic deans." In the college they are responsible for a wide range of activities. In general, the Assistant Deans advise students about academic matters, careers, fellowships, preprofessional planning, Program II, foreign study, and any other issues of academic concern to students; supervise individual student's progress toward graduation and certify completion of degree requirements; administer and coordinate programs; provide information about programs, advising, policies, procedures, and regulations to faculty members requesting it; enforce academic regulations; serve on various UFCAS, University, and TCAS committees; act as editors of, or as liaisons with editors of TCAS publications such as the *Undergraduate Bulletin*; and perform other duties delegated by the Dean or Associate Dean.

One of the Assistant Deans serves as Director of the Pre-Major Advising Center for freshmen and for sophomores who have not declared a major. The other Assistant Deans are divisional advisers—in the humanities, the natural sciences, and mathematics, and the social studies divisions—for all students who have declared a major. (See Administration of the College, above.) The relationship between these Assistant Deans and the faculty advisers is a complementary one. Faculty advisers have primary responsibility for advising about major courses and requirements. The Assistant Deans monitor graduation requirements, handle requests for exceptions, and deal with unusual academic problems and any change of status questions.

THE SCHOOL OF ENGINEERING

Dean Earl H. Dowell. The Dean of the School of Engineering has overall responsibility for instruction and research in the school as well as for the educational experience and welfare of its students. The Dean works with various constituencies including the University administration, faculty, students, and alumni on matters of general policy and delegates responsibilities within the school to members of his staff.

Associate Dean Marion L. Shepard. The Associate Dean has responsibility for academic matters pertaining to undergraduates, and for working with the academic departments in helping to establish student's programs of study. He counsels with freshmen before they arrive on campus, and through summer correspondence with them, assists in making preliminary selection of courses for the fall semester. He also plans and directs the orientation of the freshmen. Under his supervision, engineering faculty members serve as advisers to students. He approves leaves of absence, courses to be taken elsewhere, the dropping and adding of courses, academic probation, dismissal or withdrawal from the school, transfer into or out of the school, and similar matters. He serves as the Dean's deputy in representing the school on campus, among alumni, friends, supporting industries, and governmental organizations. He also provides primary liaison with the Office of Placement Services.

Assistant Dean B. Jefferson Clark. The Assistant Dean and Director of External Affairs has primary responsibility for directing capital fund and other development activities for the school, and for coordinating alumni affairs. He also bears primary responsibility for relations with industry.

FACULTY ADVISING

Apart from academic counseling of students by faculty members whom they come to know on an informal basis, faculty advising of undergraduates in Trinity College and the School of Engineering takes place in three primary ways. First, in Trinity College of Arts and Sciences, faculty members serve in the Premajor Advising Center as general academic advisers to groups of freshmen and premajor sophomores and are available for individual conferences; second, in the School of Engineering,

freshmen and sophomores are counseled by special faculty advisers before the students choose their department; and third, in all departments, the director of undergraduate studies and other faculty advisers are available to assist students concerning academic matters pertaining to their departments.

Student Affairs

Vice-President for Student Affairs, William J. Griffith, 106 Flowers. The Vice-President for Student Affairs has the ultimate responsibility for most noncurricular aspects of a student's activity and welfare and works directly with the following offices in fulfilling that responsibility.

Counseling and Psychological Services, Jane Clark Moorman, Director, Suite 214 Old Chemistry. The CAPS staff provides a coordinated and comprehensive range of counseling and psychological services to meet the unique needs of individual students in regard to their own personal development.

Services are available to all undergraduate, graduate, professional, and allied health students enrolled in Duke and include evaluation and counseling/psychotherapy regarding personal concerns of a wide variety. These include family, social, academic, career, and sexual matters. The professional staff is composed of psychologists, clinical social workers, and psychiatrists who are experienced in working with young adults. Individual, couples, and groups counseling and psychotherapy are utilized in helping students resolve their concerns once the student and staff member have identified together the most helpful alternative.

Students with indecision about career plans can receive individual or group counseling from professional career counselors. Career testing and/or a computerized career guidance system called DISCOVER may be used. A career library is maintained, which includes a wide selection of vocational and educational program resource materials to assist students in choosing a career and/or further training programs in graduate or professional study. The library is available for all Duke students whether they are involved in counseling or not.

CAPS also offers time-limited seminars and groups focusing on personal development. These groups have the advantage of pooling resources and support while at the same time teaching skills. In the past, such groups have covered coping with stress and tension, exploring career goals, assertiveness, enhancing relationships, and understanding eating disorders. However, other seminars may be offered to meet student interest.

Another important function of CAPS is the availability of the staff to the entire University community for consultation and educational activities regarding student development and mental health issues affecting not only students, but the campus community as a whole. The staff works with other campus personnel including administrators, faculty, resident advisers, Student Health Service staff, Religious Life staff, the Office of Placement Services, Freshman Advisory Counselors, PISCES, Project Wild and other student groups in meeting whatever needs of students are identified through such liaisons.

Standardized testing is also administered for the university community by CAPS, including graduate and professional school tests such as the LSAT, MCAT, and GRE, as well as a number of professional licensing examinations.

CAPS maintains a policy of strict confidentiality concerning information about each student's contact with CAPS staff members. Such information can be released, however, upon the student's specific written authorization.

Initial evaluation and brief counseling/therapy, as well as career and skills development seminars are covered by the student health fee. There are no additional costs for these services. If appropriate, a referral may be made to other staff members or a

variety of local resources including multidisciplinary mental health professionals in private practice and clinic settings.

CAPS offices are centrally located in Suite 214, Old Chemistry Building on the West Campus. Appointments may be made by calling 684-5100 Monday through Friday between 8 A.M. and 5 P.M. However, if a student's concern needs immediate attention, that should be made known to the secretary, and every effort will be made to arrange for a counselor to talk with the student immediately.

Office of Cultural Affairs, Susan Coon, Director, 109 Page. The Office of Cultural Affairs, located just off the entrance of Page Auditorium, is responsible for the creation, coordination, and implementation of many of the cultural and popular entertainments which take place on the campus. The office is directly responsible for the Duke Artists Series and Quadrangle Pictures (35 mm film program), and the Chamber Arts Society Series; it also schedules the use of Page Auditorium and directs the use of this hall. For the Summer Session Office, Ms. Coon directs the Duke University Summer Festival of the Arts, and works with the Institute of the Arts. Performances relating to campus, drama, music, and arts organizations are facilitated through this department's Page Box Office, which also serves all other programs. In addition to these arts-related activities, the Duke University Calendars (both yearly and weekly editions) are published and distributed from this office. In order to avoid conflicts, all campus events should be recorded by the calendar office as early as possible.

The film policy on pages 54-57 should be amended under Film Scheduling Procedures and Regulations to read: No public film showing (those announced to the general University community) may be scheduled at the same time on the same day as another film which has already been scheduled, unless no conflict is perceived by the group having completed their scheduling paperwork first.

International House, Brian Q. Silver, Director, 2022 Campus Drive. International House is the center of cocurricular programs of an international nature at Duke. Established in 1964, International House now includes a variety of programs of interest both to (1) the approximately 300 international students who come to Duke each year from more than 70 countries, and (2) American students who are interested in other cultures, or who are considering travel or study outside the United States.

Programs which assist students from abroad in participating in the life of the Durham and Duke communities include an intensive orientation program at the beginning of the academic year; the Host Family Program, in which interested international students may become acquainted with American families; the International Wives Club, which provides a structure for international women to meet with American women in an informal atmosphere; and the Speakers Bureau, which arranges for international students to speak at civic and social groups as well as schools in the Durham community.

The International Office, located on the second floor in International House, assists students and faculty from abroad in fulfilling the various immigration and tax formalities involved in coming to Duke.

The International Association, consisting of both international and American members, plans social and cultural programs which emphasize personal contact and the informal exchange of ideas among students from diverse backgrounds. Included are parties, pot-luck dinners, intramural and recreational sports, lectures, and an open house every Saturday evening from 7:30 to 9:00 P.M. at International House. The highlight of the association's year is International Day, scheduled after spring break.

The International Living Group, (I.L.G.), located in Alspaugh Hall, is coordinated through International House and the Office of Residential Life. The group consists of both American and international students, and offers undergraduates the option of living in an International Component (with no specific area focus), a German Component, a Spanish Corridor, and a French Corridor. Students not actually living in the

I.L.G. may become affiliated in order to participate in the various I.L.G. social and cultural activities.

The Office of Study Abroad is now located in International House; it coordinates both academic year and selected summer programs for Duke students abroad in various countries which include Austria, Canada, China, Egypt, England, Germany, India, Italy, Japan, and Spain.

The Office of Minority Affairs, Caroline L. Lattimore, Dean, 107 Union West. In 1972 the administration of Duke University established the Office of Black Affairs to meet the needs of black students. Six years later (1978), the name was changed to the Office of Minority Affairs (OMA). This office is an interdisciplinary/student service component of the University which attempts to assist minority students in their adjustment to student life. Its very existence suggests a commitment on behalf of Duke University towards implementation and centralization of services designed to address individual problems in our minority student population.

Within its organizational structure, OMA has five divisions: (a) the *administrative support staff* consists of undergraduate students who assist the Dean and the administrative secretary with clerical matters and general office operations; (b) the *counseling staff* is composed of graduate and/or professional students who offer peer counseling and advice to each minority undergraduate; (c) the *tutoring staff* is composed of undergraduate, graduate, and professional students who offer tutorial services in mathematics and chemistry; (d) the *research and development staff* conducts and offers statistical and historical research relevant to the programs, projects, and services of OMA; (e.) the *executive staff* consists of the Dean and the administrative secretary who organize and manage all OMA organizational and fiscal matters. Within the organizational structure of OMA, all staff members work to achieve the following objectives: to offer quality and humanistic counseling and advising for minority students; to advocate and promote quality human relations among the Duke University student body, faculty, and staff; to serve as a resource for student support services, faculty, and students on matters relating to minority students.

The major program components of OMA are: Counseling in Academic and Social Affairs (CASA), the Tutorial Program in Mathematics and Chemistry, and the Summer Transitional Program (STP). In coordinating these diverse services, OMA provides a mechanism through which these programs function.

The CASA program for undergraduates was designed to function as a supportive agency emphasizing various social, personal, and academic concerns. While providing specialized counseling services for minority students, CASA's primary functions have been to reach those students who may be experiencing difficulty, to assist them, and/or to refer them to support services which may be beneficial to them. Additionally, CASA works closely with students who are progressing well in the University while serving as a channel of communication for minority students. The CASA staff offers counseling through outreach, referrals, and organized group activities. Individual counseling, group learning, guidance-related activities, and professional activities are areas of concentration in the counseling process. CASA also encourages its counselees to explore and test their interests and skills in a variety of academic and professional fields.

In conjunction with the Departments of Mathematics and Chemistry, OMA has initiated a tutoring program to facilitate higher achievement and improve the academic performance in these disciplines. The tutoring program offers individualized tutoring services for those students who need such assistance. Efforts are made to provide assistance as soon as possible through early identification. The tutoring program is free to all students who qualify for financial aid. The program also assists students in identifying tutors in other academic areas, if needed. Tutors meet weekly

with the students and maintain continuous dialogue with CASA counselors, classroom instructors, University administrators, and University deans.

The Summer Transitional Program (STP) is designed to ease the precollege student's personal transition from high school to college. This multiracial program introduces students to academic and student life at Duke University. The value of STP lies in the fact that it is essentially structured around the needs of students. The program offers seven weeks of concentrated academic experience in English 3-Composition, Mathematics 9, and Mathematics 19-Precalculus, and study skills. While simultaneously providing academic enrichment, STP through individual, group, and peer counseling provides supportive relationships to enhance the social growth of the participants.

The Dean of the Office of Minority Affairs is responsible for the management and direction of all OMA operations. These include a broad range of responsibilities such as budgetary and payroll matters, research projects, official correspondence, individual and group counseling, public relations, and policy making, and coordination of the CASA and tutorial programs. The Dean of OMA maintains continuous dialogue with the Freshmen Advising Center, the Academic Deans' staff, CAPS, the Office of Student Affairs, Student Activities, the Offices of Undergraduate Admissions and Financial Aid, the Religious Life staff, the Placement Office, and numerous student organizations. All students are encouraged to utilize the services of the Office of Minority Affairs. Individual and group conferences with OMA staff members may be scheduled daily.

Office of Placement Services, Patricia O'Connor, Director, 214 Page. The staff of the Office of Placement Services is the liaison between Duke students and potential employers. Students seeking permanent employment, career apprenticeships, or information about alumni in the Duke Network may consult the staff member who has the responsibility for each area. Members of the staff are available to help students plan a program which will provide a variety of employment opportunities in their career interest fields. A library of general and specific career information is available for students to use, and a list of Duke alumni who have agreed to talk individually with students about various career fields is also available. The Office of Placement Services cooperates with other departments to plan seminars to give students an opportunity to talk with people in a variety of career fields, sponsors seminars on identifying career options, and offers sessions on interviewing and other techniques for finding employment.

The Office of Religious Activities, William H. Willimon, Minister to the University, Duke Chapel. The Minister to the University and a combined staff of twenty-two are responsible for providing a diversity of ministry which takes seriously Duke University as a pluralistic religious community. This broad ministry includes services of worship (both in Duke Chapel and in other locations in the University), programs of religion and the arts, and opportunities to develop caring and serving communities and to respond to critical social issues. Persons in the University are given an opportunity to help direct and shape this ministry and to participate in its many committees and programs. Chaplains and campus ministers are also available for individual counseling with students and others in the University community.

Office for Residential Life, Richard L. Cox, Dean, 209 Flowers. The Dean for Residential Life is concerned with the personal well-being of students and the development on the campus of a residential community supportive of a good educational experience. These concerns are addressed by the Dean and his staff through the housing of undergraduates in the residence halls, through advising students regarding personal problems, and through assisting students to plan and present educational and cultural programs within the residence halls. Over one hundred



Resident Advisers (RAs), who are staff members of the Office for Residential Life, reside in the residence halls and are directly responsible for the satisfactory administration of the student residences and their programs. They are also available for counseling students and/or referring them to the various personnel services which provide specialized advice or counsel.

The Office of Student Activities, Homai McDowell, Director, 101-3 Bryan Center. The Office of Student Activities coordinates undergraduate group activities and advises both undergraduate and graduate clubs and organizations. The office serves as a liaison between the University administration and campus groups, clubs, and organizations. It is a clearinghouse for information on reserving rooms for film showings, meetings, and parties, as well as for information on obtaining services from other University departments.

The office offers workshops and other instructional and programmatic aids to promote the development of leadership and organizational skills within student groups, and to foster interaction among club officers. The office also administers the Student Affairs Leadership Assistance Program and coordinates the participation of clubs and organizations in such activities as Black Student Weekend and Student Activities Day. The Financial Manager, Ms. Adande Washington, advises club treasurers and provides instruction in bookkeeping, budgeting, and fundraising. In addition, the office maintains a copy service for the convenience of student groups and organizations.

Opportunities for learning a variety of job skills are available under the office's internship program. Student interns have opportunities to either design or develop their own jobs, or to get hands-on experience in areas such as advising, leadership training, university administration, programming, public relations, auditing, financial management, and data processing.

The office also coordinates a variety of community service projects, including Share Your Christmas and Duke/Durham Day, and serves as a liaison between the Duke community and the Volunteer Services Bureau of Durham.

Office of Student Life, Suzanne Wasiolek, Dean, 109 Flowers. The Dean for Student Life is responsible for advising individual students regarding personal or judicial problems. She also develops the orientation programs for freshmen and transfer students and serves as adviser to the Interfraternity and Panhellenic Councils. The coordination of the application of the general rules and regulations of the University and the files on student cocurricular honors, responsibilities, and membership are handled in her office.

The Assistant Dean for Student Life, Paul Bumbalough, works with all participants in the judicial process and coordinates the student advising system.

Dean Wasiolek and her assistant work with the Freshman Advisory Council (FAC), which is composed of upperclass men and women who are selected for qualities of responsibility and leadership. Members of the FAC are assigned to a small group of freshmen and, during orientation, they welcome their groups and help acquaint them with the University. The Office of Student Life also works with entering transfer students and the Transfer Committee, assists handicapped students, and coordinates the Student Health and Student Insurance policies.

The University Union, Jake Phelps, Director, Bryan University Center. The Bryan University Center, in the heart of the West Campus, is the hub of student, cultural, and service activities. It houses, among other groups, the University Union which brings students together in carrying out its stated purpose—to stimulate, promote, and develop the social, recreational, cultural, educational, and spiritual activities of the Duke University community. The Union sponsors a broad program including lectures, concerts, recreational activities, dances, and exhibits adapted to the leisure time interest and needs of individuals and diverse groups within the

Student Health Services

Student Health Program, Howard J. Eisenson, M.D., Director, Pickens Building. The goals of the Duke Student Health Program are to provide comprehensive high quality medical care, encourage students to make informed decisions leading to healthy life styles, and to act as a liaison when students need medical care not available at Student Health. To achieve these goals each student is assigned to a physician or physician extender who acts as their primary health care provider.

The components of the Student Health Program include:

- 1. Student Health Service, located in the Pickens Building.
- 2. The University Infirmary, located on East Campus.
- 3. The Health Education Program, headquartered in the Pickens Building, and operating campus-wide.

The Student Health Service at Pickens is open during both regular and summer sessions. The University Infirmary is open from the opening of the University in the fall until graduation day in the spring. All currently enrolled full-time students and part-time degree candidates are required to pay the student health fee. All fees are paid directly to the Bursar's office. Information regarding the fee is available at the Bursar's office.

The resources of the Duke University Medical Center are available to all Duke students and their spouses and children. Charges for any and all services received from the Medical Center are the responsibility of the student as are the charges for services received from physicians not associated with Duke University.

Policy Regarding Medical Excuses. The Duke University Student Health Service provides no written medical excuses. The student with an illness requiring infirmary care may be permitted to postpone academic obligations arising during the infirmary stay. Such an individual is expected to make their own arrangement for later completion of any missed academic responsibility. Faculty members may verify the fact that a student is confined to the infirmary by calling the student's academic dean, who receives a daily report of admissions and discharges.

Confidentiality attached to the University student's health record is carefully maintained. Release of any health information requires prior permission of the student involved. Such a policy is strictly enforced irrespective of the requesting source (e.g., University official, parents, family of the student, governmental authorities, physicians not immediately involved in care of the students).

IMPORTANT TELEPHONE NUMBERS.

24-hour Student Health Service number; 684-6721

University Infirmary: 684-3367

For Emergency Transportation (University Public Health Service): day or night

On campus: Campus Police, 684-2444

Off campus: Durham Ambulance Service, Durham telephone, 477-7341

STUDENT HEALTH SERVICE HOURS

At Student Health Service, Pickens Building (by appointment)

Monday-Friday 8:00 A.M.-6:30 P.M.

Saturday 10:00 A.M.-1:30 P.M.

Sunday 2:00 P.M.-4:30 P.M.

FOR EMERGENCY PROBLEMS (when Student Health Service is not open)

Call University Infirmary, 684-3367

SERVICES PROVIDED BY THE STUDENT HEALTH CENTER

The following services are provided: unlimited outpatient visits to the Student Health Services; routine laboratory and x-ray examinations as performed in the Stu-

dent Health service to diagnose acute illness or injury; most **medications for care of acute illness** treated in the Student Health Service or infirmary.

Medical management of gynecological and sexually transmitted problems will be provided by the Student Health Service. Women students who have paid the student health fee will be eligible to receive an annual gynecological examination including the PAP smear without charge.

University Infirmary stays for treatment of acute illness, injury, or mental/emotional dysfunction. Students not participating in the University prepaid board plan will be charged a nominal fee for meal services. **Immunizations** as required for the general protection of the student body may be provided free of charge. Immunizations required for other reasons (travel abroad, employment, etc.) can be arranged at cost. **Certain periodic health immunizations** such as for practice teaching, scholarships, and educational programs can be obtained without charge and by appointment with Student Health Service physicians. Other examinations, such as for regular employment, travel abroad, premarital, and insurance can be arranged, but will be provided at the student's expense. **Regular injections**, as in the treatment of allergic conditions, can be scheduled through the Health Services; however, the student must provide the vaccine required, which can be stored at the Health Service. There is a charge for this service payable at the beginning of each semester. **Special appliances** such as crutches will be provided, but the cost must be paid for by the students. Crutches may be returned for a rebate.

SERVICES WHICH ARE THE STUDENT'S FINANCIAL RESPONSIBILITY

The following are the student's responsibility: **routine eye examinations**, lens prescriptions, or care of contact lens problems. (Treatment for acute eye disease or injury is provided); **Routine dental care**. (Emergency treatment for infection or pain is provided on a limited basis); Treatment of injury or illness occurring between semesters; **care of dependents** or conditions relating to pregnancy; **long-term psychiatric care**, i.e., acute psychiatric care requiring hospitalization, and some other forms of extended psychotherapy. (Call CAPS for clarification); **contraceptive supplies** (the pharmacy at Pickens does, however, stock contraceptive supplies which are available at low cost).

Students always have the option of employing private physicians of their own choosing. Financial responsibility in such instances, of course, rests with the students.

THE DUKE STUDENT ACCIDENT AND SICKNESS POLICY

The Duke Student Accident and Sickness Policy is provided by the National Student Services, Inc. in association with Hill, Chesson and Roach, Durham, North Carolina. The insurance policy provides coverage for hospitalization, major medical expenses, certain surgical services and limited treatment and diagnosis on an outpatient basis. There are also provisions available for coverage for the student's spouse and dependent children.

Participation in some supplemental health insurance program is strongly suggested for students. All full-time and part-time degree candidates are required to enroll in the Student Accident and Sickness Policy unless they sign a waiver that they are covered by other comparable insurance or accept responsibility for all medical expenses. The policy number and name of the insurance is required on the waiver.

Detailed information regarding this insurance coverage is available in the Office of the Student Health Service and the Dean for Student Life's office. Student Health also offers information on insurance coverage via its student patient advocacy service.

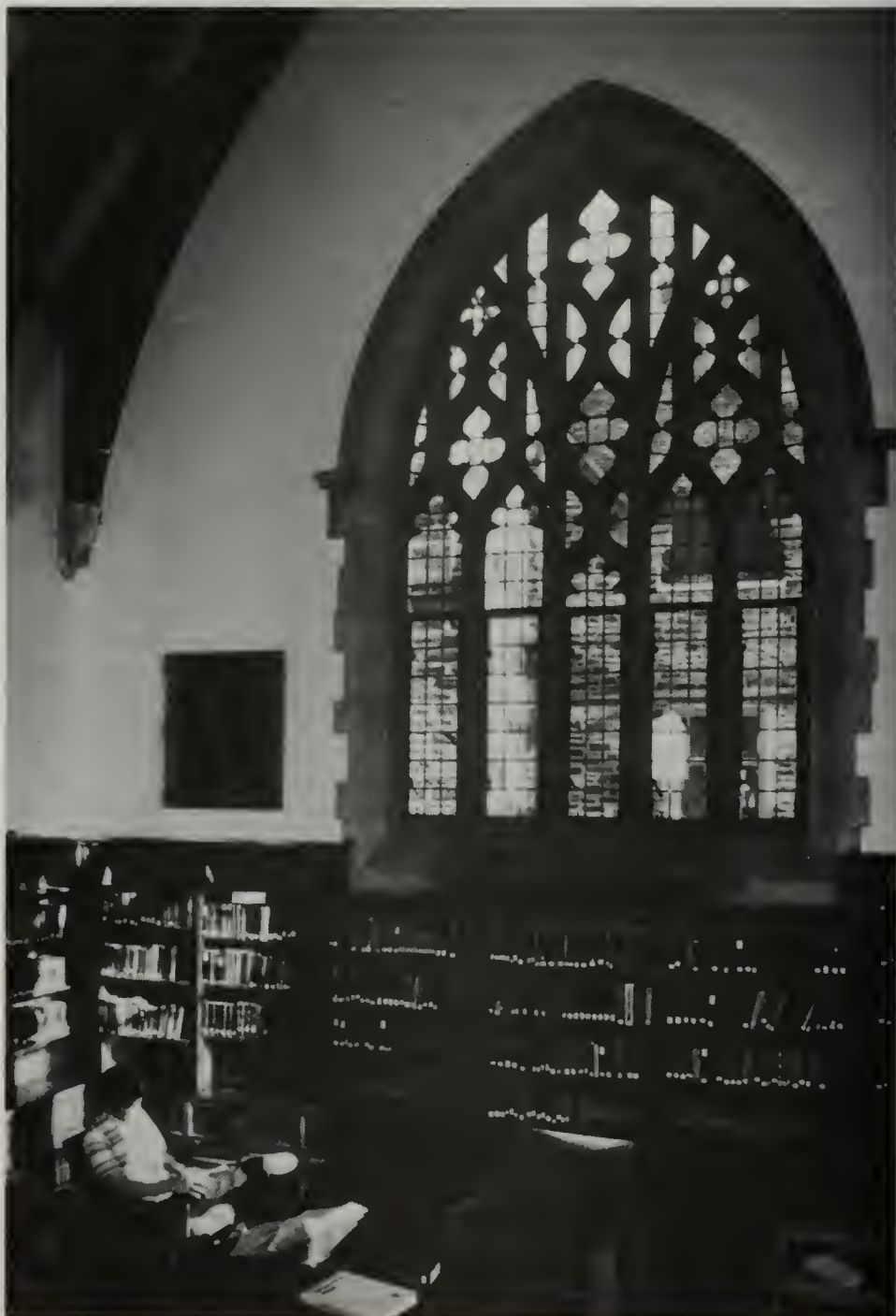
Department of Housing Management.

Fidelia Thomason, Director, 018 West Union. The Department of Housing Management, an Administrative Services Division auxiliary, is responsible for residence hall and apartment facilities on East, West, Central, and North Campuses. The department has responsibility for the following services: physical maintenance of the residential buildings with work performed by the Physical Plant Department in the residence halls and Housing Management in the apartments, custodial care of the residential facilities, key issue and control (rooms and buildings), storage of personal effects, and control of furniture and equipment. Housing Management is also responsible for academic year and summer assignments in Central Campus Apartments and for summer assignments in the residence halls. Business matters related to residential fees and rents come under the purview of the department. Residence hall and apartment business matters should be discussed with the Housing Administration office, 016 West Union Building. Questions about a student's facility service needs should be discussed with the residential area service office: 101R House D, 684-5486, for residents of main West Campus except Few; House VOO, 684-5559, for residents of Few and Edens; Hanes House desk, 684-5394, for residents of Hanes, Hanes Annex, and Trent; Gilbert-Addoms desk, 684-5320, for residents of East Campus; and 217 Anderson Street, 684-5813, for residents of Central Campus.

Office of Alumni Affairs

Laney Funderburk, Director, 614 Chapel Drive. The Alumni Affairs Office initiates and sponsors a variety of activities and services linking Duke students with one of the University's best resources—its alumni. The freshman class directory, one of the most closely read booklets freshmen receive, is sponsored by the General Alumni Association and is compiled by Alumni Affairs. Homecoming Weekend in the fall, one of the traditional alumni-student activities, is another undertaking of the Alumni Affairs Office. A staff person has the responsibility to serve in an active role in all student-related activities, and this person works closely with Student Alumni Relations Committee (SARC), which is involved in organizing and supervising the Duke Network and the Conference on Career Choices. These programs are designed to strengthen student-alumni relationships and increase student involvement generally. Many get-togethers are planned for new and current students both on and off the campus. A member of the alumni staff serves as associate with the senior, junior, and sophomore classes to assist their officers with class activities and projects.

Academic Information



Miscellaneous Academic Policies and Procedures

PROCEDURE FOR RESOLUTION OF STUDENTS' ACADEMIC CONCERNS

Trinity College of Arts and Sciences provides formal educational opportunities for its students under the assumption that successful transmission and accumulation of knowledge and intellectual understanding depend on the mutual efforts of teachers and students. Ideally, the college offers a range of learning experiences in which students strive to learn enough to be able to test their ideas against those of the faculty, and faculty, through the preparation of course materials and the freshness of view of their students, discover nuances in their disciplines.

Sometimes, however, student-faculty interrelationships in certain courses give rise to concerns that, for whatever reason, can inhibit successful teaching and learning. When this occurs students often need assistance in resolving the issues.

The faculty and administration of Trinity College of Arts and Sciences attempt to be genuinely responsive to all such matters and a student should not hesitate to seek assistance from faculty and administrative officers in resolving problems.

Questions about course content, an instructor's methods of presentation, the level of discourse, criteria for evaluation of students, or about grades or administrative procedures in a course, should be directed to the instructor of the course. If a student believes that productive discussion with the instructor is not possible, courtesy requires that the instructor be informed before the student refers questions about the course to the Director of Undergraduate Studies or, in his or her absence, to the Chairman of the department. If a student's concern involves a departmental policy rather than an individual course, the student should first confer with the Director of Undergraduate Studies in the department. A list of the names, addresses, and telephone numbers of the various Directors of Undergraduate Studies can be found in the University Directory. Staff members in the department offices can assist in arranging appointments with the Directors. When necessary, Directors of Undergraduate Studies may refer students to the department Chairman.

A student in doubt about how to proceed in discussing a particular problem, or who seeks resolution of a problem, is encouraged to confer with an academic dean of Trinity College.

In those exceptional cases where a problem remains unresolved through informal discussion, a formal procedure of appeal to the Associate Dean and Dean of Trinity College of Arts and Sciences is available. A student may initiate this more formal appeal procedure by bringing his or her problem—with assurance of confidentiality, if requested—to the attention of the Associate Dean of Trinity College of Arts

and Sciences, who will request information about the nature of the issue and about the earlier efforts made to deal with it. The Dean of Trinity College will be informed about the situation.

Statement on Sexual Harassment of Students

Definition. Sexual harassment in an academic environment is understood to be the intentional misuse of authority by a faculty member or an administrator by conduct focusing on the sexuality of a student in the academic context.

Examples. Sexual harassment can take a variety of forms, from verbal suggestion or innuendo and repeated physical overtures to requests for sexual relationships accompanied by implied or overt threats of inducements concerning a student's grades, recommendations, academic progress, or professional standing.

Policy. Sexual harassment may be egregious or less serious. Regardless of degree, it abuses academic relationships and has no place in the university. Appropriate sanctions will be imposed. Sexual harassment may rise to the level of misconduct justifying dismissal.

Procedures. 1. The Provost will appoint a committee consisting of two faculty members, two students, and two administrators, with an equal number of men and women. The terms of service will be for two years, renewable twice, and the terms will be staggered. In addition, he will appoint a professional counselor as a staff member of the committee. The Executive Committee of the Academic Council will nominate the faculty members of the committee; the Provost will select two students, one male and one female, from a slate of nominations submitted by ASDU and by the Graduate and Professional Students Council. After consultation with the Executive Committee of the Academic Council, the Provost will appoint the two administrators from the ranks of those administrators who are not academic deans nor have reporting relationships to academic deans. They might, for example, be appointed from the Office of Student Affairs or from the Office of Counseling and Psychological Services.

The Executive Committee of the Academic Council, after consultation with the student organizations, will nominate one of the two faculty members to chair the committee. The chairman should be encouraged to accept the appointment for at least two terms.

2. The names and office numbers of the members of this committee shall be publicized, and *students shall be invited to discuss with any member of the committee any incident that a student perceives as sexual harassment*. Committee members will inform the chairman, when it appears appropriate, of such contacts and may discuss the incident informally with other members of the committee.

3. The chairman shall convene the committee if further action is considered necessary.

a. Prior to the time the committee determines whether a complaint should be formally investigated, one or more members of the committee may discuss the complaint with the faculty member or administrator without in any way disclosing the identity of the complaining student.

b. Committee members (or the committee) in discussing the complaint with the student should offer counseling services through the committee and should explain the options of mediation and resolution and fact-finding for determining probable cause. After the initial discussions, the committee member (or the committee) and the student may come to the conclusion that sexual harassment did not, in fact, occur, and the case shall be dropped.

c. After the discussion with the complaining student and any informal discussion with the faculty member or administrator, the committee shall determine

whether to initiate a formal investigation of the complaint. If the committee decides to initiate an investigation, the accused faculty member or administrator shall be informed and the name of the complaining student disclosed to him or her.

d. In carrying out the investigation, the involved faculty member or administrator shall be apprised of the evidence that had been submitted to or gathered by the committee. The faculty member or administrator shall be given a fair opportunity to respond to such evidence as well as to present any additional evidence that the faculty member considers relevant.

e. After this investigation the committee may find that the incident does not warrant further proceedings or may resolve the dispute in a manner that is accepted by all parties involved. If the dispute cannot be resolved in one of these two ways, and the committee has found probable cause, the committee shall forward the information it has collected, a report summarizing this information, and the committee's evaluation of the information to the dean of the school of the accused faculty member or administrator.

4. The dean, after considering the information presented to him by the committee, shall determine the action which he or she considers appropriate. The dean shall inform the faculty member or administrator by letter of the dean's decision and of the faculty member's right to a hearing. If the faculty member does not request a hearing, the letter shall become a part of the faculty member's file and the specified corrective action shall be taken.

5. If the complaining student or the faculty member requests a hearing, a hearing shall be held to determine whether the faculty member had engaged in sexual harassment.

a. The hearing shall be held before the Provost or his designate who shall determine the procedures to be followed. If the Provost finds that no sexual harassment occurred, no action shall be taken against the faculty member and no record of the complaint shall appear in his file. If the Provost finds that sexual harassment occurred, he shall so inform the parties and determine any corrective action to be taken. The decision of the Provost may be appealed, by either the student or the faculty member, to the President.

b. If the corrective action determined by the Provost is dismissal, a further hearing shall be conducted in accordance with the procedures for cases involving faculty dismissal (See Appendix C, Section V).

Records. 1. The chairman of the committee shall keep records of each complaint. These records should, at least, include (1) the sex of the complaining student and faculty member or administrator involved, (2) the student-faculty or student-administrator relationship, (3) the school or department involved, (4) the nature of the complaint, and (5) the action of the committee. These records are for the internal use of the committee only; they should be retained in the committee files for ten years and then destroyed.

2. The committee shall prepare an annual report of its activities, which shall retain complete confidentiality as to the names of persons involved. This report will be sent to the President, the Provost, the Executive Committee of the Academic Council, ASDU, and the Graduate and Professional Students Association.

Residential Information



Residential Facilities

TRINITY COLLEGE OF ARTS AND SCIENCES THE SCHOOL OF ENGINEERING

Within the framework of the regulations of the community, individual students are responsible for their own decisions and choices. The Colleges adhere to the premise that social regulations and activities of the various living groups must be supportive of the general welfare of the total University community and must be protective of the interests of individuals and minority viewpoints within each living group. Most of these regulations are enforced by the members of the community. In addition to the social regulations formulated by each living group within the guidelines established by the Residential Life Committee, there are certain policies specified by the University that apply to students living within the residence halls and pertain to the safety and security of students and the orderly functioning of the dormitories. Any student or group of students may recommend a change in the regulations by presenting a proposal to the Residential Policy Committee, an advisory committee on matters of housing to the Dean for Residential Life.

The residential facilities of Trinity College and the School of Engineering are available to all full-time single undergraduate students who have been in continuous residence since their freshman year as well as to students on leaves of absence or off campus provided they have filed the appropriate papers by established deadlines to the Housing Coordinator in the Office of Residential Life. Duke University residential facilities include residence halls and Central Campus Apartments. No undergraduate student may live in the residence halls for more than four years. Students who enroll in graduate or professional programs prior to receiving the undergraduate degree (such as "three/two" programs) are no longer eligible for undergraduate housing.

Freshman Residence Halls. Freshmen reside in all-freshman houses, the majority of which are coed, clustered on three of the four residential areas. The housing assignments are made by lottery to the houses; however, consideration is given to a student's preference for single-sex housing. Within the residence halls, single, double, and triple rooms are available.

Upperclass Residence Halls. Upperclass students live in coed and single-sex residence halls on East and West Campuses. There are three types of living groups: independent or lottery, selective, and commitment. The independent living groups have their spaces filled by a general housing lottery. The selective living groups, which include the fraternities, select their members. The commitment houses select a third

of their new members from among the students who have made application to the house and the other two-thirds are lotteried from among the remaining applicants. Within all of the upperclass houses, except those located in Edens, there are triple as well as single and double rooms.

Central Campus Apartments. Located on Central Campus is a complex of University owned and operated apartments which accommodate over 700 undergraduate students. The remainder of the complex houses a cross-section of students from various schools and colleges of the University. This facility is part of the undergraduate lottery space, and assignment to this space satisfies the University's guarantee to provide eight semesters of housing.

Residential Regulations

(See also Student Life Section for additional information.)

In its residential policies and procedures, Duke University seeks to foster a climate of responsibility, initiative, and creativity on the part of individuals and living groups. A successful residential community is one in which students take pride in their physical surroundings and assume active responsibility for the maintenance of acceptable standards of public behavior in their living areas.

While students are indeed entitled to a general expectation of privacy within the confines of their own individual rooms (although, of course, extraordinary and compelling circumstances may occasionally require that this expectation be suspended), the University emphatically refuses to regard either students' immediate living quarters or their commons areas as privileged sanctuaries where students may act with absolute impunity and without regard to minimum standards of civility, decency, and respect for the rights of other members of the University community. Moreover, occupancy of an individual room or of a residence hall does not confer any proprietary interest or right of ownership on the part of the living group as a whole. The student and the living group are both properly viewed not as *owners* but as *custodians* of that living space (with all of its physical amenities) which has been assigned to them. And inherent in this custodial relationship, of course, is the right of the University to promulgate criteria governing the circumstances under which this relationship may be entered into, may be maintained in good standing, or may be terminated.

While the majority of problems incurred between or among roommates can be resolved by the students, with or without assistance; there are some cases in which a stalemate occurs. The Office of Residential Life will, in those cases, reserve the right to convene an arbitration board to resolve the problem. The decision of the board is final.

House Closing in Residence Halls with Security Systems. Houses are locked by 12:00 A.M. or at an earlier time agreed to by the house membership. Each student must obtain an entrance card key for his/her house from the Service Office in his/her area. A deposit is charged to the resident's Bursar's account. The deposit is refunded if the entrance card key is returned within 48 hours after the student vacates the building. Entrance card keys are not to be loaned or borrowed.

Signing Out. There is no requirement that a student leave a record of his or her whereabouts if he or she leaves the Duke campus. However, in order that students can be located when needed in an emergency and in the interest of students' safety, it is recommended that students leave records of their whereabouts and anticipated time of return with the residential staff or with roommates when they are out of the residence hall.

Meetings in Residence Halls. Because living group facilities are limited and are there to serve all the house members, it is expected that they will not be used for

gatherings or meetings unless approved by the House Council and the appropriate Resident Adviser.

Guests. Students may have overnight guests for reasonable periods of time subject to the specified residence hall visitation policies for each residential unit. However, continued use of a residence hall room or Central Campus apartment by person or persons other than those to whom the room or apartment is rented is prohibited. Overnight guests should not be entertained during examination periods. The Colleges reserve the right to ask a guest to leave if University policies and residence hall regulations are not obeyed or if complaints are received from members of the resident community. A student may not have guests over the objection of his/her roommate(s). Violation of any of these regulations could lead to nonresidents being charged with trespassing and residents (both guest and host) having their housing licenses revoked.

LIVING OFF-CAMPUS

Students above the freshman level who wish to live off-campus should file the appropriate forms with the Housing Coordinator.

If a student plans to live off campus and return to University housing at a later time, he/she *must* request that his/her housing deposit be held up to one calendar year, after which it would be refunded and the housing guarantee revoked. Such requests should be made by completing the appropriate form in the Office of the Student Housing Coordinator in the Office of Residential Life.

HOUSING LICENSE

Prior to occupancy of space in a University residence hall or Central Campus apartment, each student must sign a housing license. Licenses for the residence hall must be filed with the Housing Coordinator in the Office of Residential Life. Licenses for the Central Campus apartments must be filed with the Housing Administration office. Refer to the appendices for copies of the terms of the residence hall license and the Central Campus housing license.

REGULATIONS AND JUDICIAL BOARDS FOR RESIDENTIAL UNITS

As provided under the judicial structure of the University, each residential unit may have a judicial board which has jurisdiction over most offenses involving violations of regulations relating to dormitory procedures and social regulations. Information about residential judicial structures and procedures common to the undergraduate community appears in Appendix D.

PRIVACY OF STUDENT'S ROOMS AND APARTMENTS

Students who reside in University residences are assured the privacy of their rooms and apartments and freedom from the admission into or search of their rooms or apartments by any unauthorized persons; however, the University is obligated to maintain reasonable surveillance of the residential areas to promote an environment consistent with the aims of an academic community. To foster these conditions the following regulations are now in effect:

1. Housing Management and custodial personnel may enter assigned rooms or apartments at reasonable hours on days designated by either bulletin board notices or similar prior notification for the purpose of carrying out their assigned tasks and functions. Other personnel may enter assigned rooms when accompanied by proper authorization from the appropriate administrative official (see section 2 c). In the case of residence halls, this notification, when feasible, shall be posted on the residence hall bulletin board stating what dates rooms will be entered. Maintenance personnel

may enter assigned rooms or apartments at reasonable hours for the purpose of carrying out their assigned tasks and functions. Housing Management personnel are expected to inspect the maintenance work done within twelve (12) working days to validate satisfactory completion of such work. Employees in the above categories may report on the condition of University facilities and equipment, on violations of the housing license, or on situations which jeopardize the overall health and safety of the residence hall population. All personnel in the above category shall leave written notice stating the purpose for entering. Upon receipt of this notice the occupant may contact the area Service Office to discuss the entry. The written notices must, as well, advise the occupant that subsequent investigation or repair may henceforth occur at any time during the normal work week of Housing Management or maintenance personnel. (Note: General rule or enforcement procedures will not be founded on information relating to the personal contents of rooms from personnel mentioned unless such contents are specifically prohibited by University regulations or by the housing license published in advance.)

2. No person, with the exception of those listed in section 1 above, shall enter assigned rooms or apartments except under the following conditions:

- a. consent of the occupant(s); or
- b. presentation of a properly drawn legal search warrant; or
- c. presentation of a written authorization from the Dean for Residential Life, the Dean for Student Life, or their representatives, as appropriate; or
- d. emergency situations or immediate threat to preservation of the building and the safety of occupant(s) and/or the residential population.

3. Reports made as a result of inspections related to physical facilities and/or furnishings will be handled by the Department of Housing Management in accordance with the existing residential regulations as published in bulletin form by the University.

4. Written authorization from the deans must specify the reasons for believing such a search is necessary, the objects sought, and the area to be searched.

5. The request for a search, if approved by the designated authorities, shall be kept in records with the authorization until the time of the student's graduation and shall be available to the student for examination. The records will be kept completely separate from the student's permanent record. Should the search figure in any trial proceeding within the University, the authorization shall be attached to the trial record; if no action is taken following an authorized search, notation of this fact shall be filed with the authorization. No action shall be taken in regards to objects found but not specified on the authorization of the search.

In the absence of a legally drawn search warrant, no general searches shall be conducted by University personnel except with the possession of the written authorization of all these above-mentioned deans, stating the reasons for the search and the specified objects sought, or under circumstances deemed to be of extreme emergency by these deans or the officer on each campus in charge of maintenance.

CARE OF RESIDENCE HALL ROOMS AND ADJACENT CAMPUS AREAS

Though limited custodial services for common use areas are available, a student is responsible for the care of his or her room and furnishings and is required, as a condition of occupancy, to keep the room reasonably clean and orderly. The University reserves the right for Housing Management, as well as custodial or maintenance personnel, to enter at reasonable hours to inspect the condition of any student's room in accordance with the current privacy policy.

Nails, screws, tacks, or adhesives on any walls or woodwork of the residence are prohibited. The utilities, wiring, locks, or screens should not be altered in any way. (See Housing License for more detailed information.)

Games and other activities which may damage lawns or shrubbery adjacent to residence halls are not permitted. Defacing or painting buildings and adjacent installations, sidewalks, trees, and shrubbery is prohibited.

No student shall enter custodial, utility, or maintenance spaces within the residence halls unless accompanied by University-authorized custodial or maintenance personnel. Use of roof areas is prohibited.

Complaints and requests pertaining to maintenance and services should be reported to the Service Office in the appropriate residential area.

Housekeeping services such as cleaning the bathroom, sweeping, mopping, vacuuming, and trash removal will be provided on weekdays during the academic year (excluding holidays) in common areas of the residence halls. Cleaning of individual rooms is the responsibility of the resident(s).

Any extraordinary cleaning, such as after a party, may be charged to the living group. A living group will normally be given until noon to clean the area and avoid charges. If in the judgment of the Housekeeping Supervisor or Service Manager the mess presents a hazard to people, furnishings, or structure, clean up prior to noon will be authorized at the group's expense. Of particular concern are broken glass, standing liquids, flammable trash, and health hazards.

Each living group shall have 24 hours access to and responsibility for a set of cleaning equipment furnished by Housing Management, consisting of a mop, bucket, broom, dustpan, and trash bags. The location of this equipment shall be by mutual agreement between the living group and the appropriate Service Office.

Any living group charged with a four hour or longer clean-up by Housing Management will be sent a warning letter by Residential Life. If a group receives a second four hour or longer charge in the same semester, that group will come before the Residential Judicial Board for adjudication. A group's record will be cleared at the end of the fall semester unless it has appeared before the Residential Judicial Board because of the clean-up policy. All records will be cleared at the end of the academic year.

All living groups are responsible for cleaning trash beyond the normal amount on the grounds adjacent to their residence halls. Failure to have the area cleaned before 10 A.M. the day after an event will result in a minimum charge of \$25 to be determined by the Physical Plant office; however, the enforcement procedure indicated in the above paragraph is also applicable to failure to clean grounds adjacent to the residence halls.

Extra trash containers are available from the Physical Plant office by calling 684-3611 at least two days prior to the event.

Damage Charges. Students will be held responsible for damages that occur in their rooms. Living groups similarly will be charged for damage to public areas, equipment and furnishings, buildings, sidewalks, shrubbery, and lawns; repair costs will be billed to the students in accordance with procedures established by the University after consultation with the Residential Policy Committee. At the end of each academic year, outstanding living group charges will be divided equally among the group's members and charged to their Bursar's accounts. Littering which causes excess work to clean will be charged to the students and living groups involved. Appeals for reassignment of costs charged by Housing Management should be made through the residential area Service Manager. If further appeal is deemed necessary, the final decision on appeals is made by the Residential Judicial Board.

Storage. During the academic year, empty trunks and luggage may be stored without charge in the area designated for each residence hall. All items placed in storage for the academic year must be removed prior to the last day of final examinations for the spring semester. Nonstudents and students residing off-campus may not store personal effects at any time in the residence hall storage rooms. Items placed in storage must be well marked with owner's name and permanent mailing address.

Receipts given at time of acceptance must be surrendered by the student on withdrawal of storage items. Items left in storage rooms at the end of the spring term for which summer storage fees have not been paid will be disposed of in the best interest of the University.

The Department of Housing Management provides space for storage of personal or group-owned items during the summer months on a fee paid basis and in approved areas only. Any personal effects or group-owned items left in the residence halls not in approved storage areas (including, but not limited to, commons rooms, closets, and above suspended ceilings) may be disposed of without notice or reimbursement to the owner. Designated closets have been made available to some living groups for storage of group-owned items such as file cabinets, party supplies, and fraternal material. These closets may not be used by members of the living groups for storage of personal possessions. Housing Management is not liable for damage to or loss of stored living group items except as the fee paid storage terms allow.

RESIDENCE HALL BENCH POLICY

Only approved living groups may place benches on University property. Benches will be permitted only in the area immediately adjacent to a particular residence unit. The bench may be put in place by the living group as long as the dimensions are no larger than 12' in length, and 5' in height from the ground, and 6' in depth. Any benches cemented in the ground which need to be moved for any reason will be cut off at ground level and not replaced in concrete by the University. Any bench too large to move in one piece will be separated into manageable pieces and reassembled using existing lumber without reimbursement to the living group for damages. Every effort will be made to retain the integrity of each bench when it is necessary to move a bench; however, the University will not be responsible for replacing concrete footings or materials damaged as a result of a move. Living group benches may have to be moved temporarily (e.g., for Commencement or summer programming). The specific design, including sketches noting dimensions, and desired location of a living group's bench must be submitted in writing to the Dean for Residential Life and the University Architect at least three weeks prior to the desired construction date. Approval for a bench must be received from the Dean for Residential Life and the University Architect.

LIVING GROUP BUILDING IMPROVEMENTS AND RENOVATIONS POLICY

Any alterations and/or renovations to residence halls must be approved by the Director of Housing Management.

Any living groups wishing to make permanent or attached alterations, additions, or renovations to residence halls must submit plans, drawings, and other related information to the Director of Housing Management for evaluation.

If approved, such alterations, additions, or renovations will be accomplished at the living group's expense. Housing Management will inspect the completed work to make sure approved materials and plans were used and that the quality of construction is acceptable. Any construction which does not pass inspection must be removed or corrected as directed by Housing Management and at the living group's expense.

Anything attached to the building will become the property of and maintained by Duke University. No reimbursement will be considered if the group is subsequently moved.

Any changes of a permanent or attached nature not approved through official channels may be removed at the convenience of the University and subsequent repairs made at the group's expense.

Any nonattached additions a living group wishes to make to the public areas of its residential hall (e.g., extra furniture, art work, portable bars) need not be submit-

ted to the Director of Housing Management for approval so long as the items are truly portable. However, the living group should understand that Housing Management may require the group to remove (or may remove at the group's expense) any item which may damage the facility, hinder maintenance of the facility, or present a health or safety hazard. Groups should also understand that Housing Management may find it necessary to remove their additions during the summer in order to accommodate summer users or maintenance projects. In such cases, Housing Management will take every precaution not to damage the item and to return it in tact. However, should the item be damaged or lost, no reimbursement will be made to the group. Living groups are encouraged to seek their Service Manager's advice when considering nonattached additions.

EXTERIOR SIGN POLICY FOR RESIDENCE HALLS

Exterior building signs identifying living groups will be permitted only in the immediate area of the residence. The sign must be provided by the group and approved jointly by the Director of Housing Management, the Dean for Residential Life, and the University architect.

All such signs will be mounted on the buildings by Housing Management at no cost to the group. Requests for sign approval and mounting should be made in writing to the Director of Housing Management and must include a sketch of the proposed sign, indicating proposed dimensions and colors, in ample time for approval before beginning to build the sign. Any repairs to existing signs must be approved by the Director of Housing Management.

BAR POLICY FOR RESIDENCE HALLS

See also "Living Group Building Improvements and Renovations Policy."

1. No permanently attached bars will be allowed in living groups (after 1981). Bars built in University facilities which are affixed in any way to the building or which are too heavy to be moved will be destroyed at the University's convenience and at the expense of the living group, including necessary repairs to the facility.

2. Only movable (not attached to floor or building) bars will be allowed. The bar should be able to be removed from the building without damage to the bar or to the building.

3. Any group being moved to a location where a serviceable bar is located will not be reimbursed for their current bar which must remain in place.

4. Groups moving to a new location who are unable to move current bar (built by that group prior to 1981) will be reimbursed in order to build a movable bar. Plans and sketches for a bar which a living group wants to construct should be forwarded to the Dean for Residential Life for approval. Plans should be submitted at least two weeks prior to the date intended for initiating the project.

FIRE SAFETY

Any living group or individuals planning a party on Duke University property which has as decorations such potential fire hazards as paper draping, hay, bamboo, etc., must obtain clearance for the use of decorations from the Safety Manager of the Duke Public Safety Office (684-5909). Approval from the Safety Office does not relieve a living group of its responsibility for prompt clean-up or of its financial responsibility for damages (including any excess cleaning required by Housing Management). Open fires are not permitted on Duke University property except as approved by the Safety Office.

POLICY FOR REFUND OF RESIDENTIAL DEPOSITS, RENT PREPAYMENT, BOARD PAYMENTS, AND RENTS FOR RESIDENCE HALL STUDENTS

Residential Deposits. The one hundred dollar (\$100) residential deposit paid upon matriculation to Duke will be refunded if the Office of Residential Life is notified by the student prior to July 1 of his or her intent to move out of residence hall housing for the fall semester and by December 1 if cancelling for the spring semester.

Fall Rent Prepayment. The fifty dollar (\$50) rent prepayment will be refunded if the Office of Residential Life is notified by the student prior to the last day of spring semester classes of his or her intent to move out of residence hall housing.

Move from Residence Halls to Central Campus Apartments. Students who move from the residence halls to Central Campus Apartments will have their room rent payment credited to the Central Campus Apartment rent and will receive full refund of unused board payment (unused points) if the board contract is terminated at the time of the residence hall cancellation. Students also have the option of maintaining or changing the board contract at this time.

Cancelling a Residence Hall Assignment. Undergraduate students who have been assigned a room who wish to cancel their assignment must notify the Office of Residential Life in writing. Students who cancel their assignments after the contract has begun will be entitled to a refund of the unused rent, the amount to be determined according to the date the keys are returned to the service office and/or the date Housing Management inspects the room and confirms that the space has been vacated. In any case a minimum of \$50 will be retained by the Department of Housing Management. Refunds of unused board payment (unused points) will be given if the board contract is terminated at the time of room cancellation.

HOUSE DUES POLICY

Duke University has a strong commitment to a residential community supportive of a good educational experience. The activities of each residential house which contribute to this experience are possible only through a financial commitment of the members of that house. Therefore, students living within a residential hall are obliged to pay the dues upon which the residents agree. (It should be noted that the University has taken this obligation into account when determining a student's financial aid package.)

1. It is required that house dues be agreed upon by at least a two-thirds majority vote of the living group membership in a well-announced meeting attended by at least three-fifths of the members or through a poll of all residents. Further, it is understood that this is a private matter between the individual and his/her living group. Each living group is required to set dues to a \$20 per person minimum for each semester.

2. Students in living groups which are part of a federation assume the responsibility for paying federation dues in addition to house dues. Treasurers of houses which are part of federations are expected to collect the federation dues from members of their living groups and submit the total amount due to the federation at a time mutually agreed upon by the living groups and their federation.

3. Students who move from one living group to another can expect a prorated refund from their former living group and are expected to pay prorated house dues to the new living group.

4. Students who have accepted membership in a particular living group in which they continue to reside and, at a later time, accept membership in another group shall be obligated to pay dues to both groups unless a written agreement is negotiated with the groups involved.

5. Independents involuntarily placed in fraternity sections or fraternity men involuntarily placed in independent sections are not obligated to pay house dues. They may choose to pay social dues if invited to do so by the fraternity or the independent house; however, they are obligated to pay a small annual fee (usually \$15 or less) if they use the commons room and television and must help with normal expenses due to damage in common areas.

6. Should a selective living group be unable to fill its assigned space with its members, up to 10 percent of the space (with approval of the Office of Residential Life) may be allocated to "affiliate" members who have a contractual financial arrangement with the selective group. Such persons have full social privileges within the selective group and are often referred to as "friends of the house."

ASSISTANCE FOR LIVING GROUPS IN COLLECTING DUES

The Office of Residential Life will assist in collecting dues *only if* house treasurers submit to that office a list of those delinquent in payment by September 30 for first semester dues and February 3 for second semester dues along with a statement indicating that portion of dues which is used to buy alcohol (the Office of Residential Life will not assist in the collection of living group dues which is used to purchase alcohol). Also, in order to have the assistance of that office in collecting dues, house treasurers *must* be audited by the Student Affairs Financial Manager at least once during each semester, preferably at the end of each semester.

Appeals. Every house must make available to all students the option of appealing in-house for a waiver of dues. Although some groups prefer to have such appeals heard by the House Judicial Board, it is recommended that appeals be heard in a closed meeting of the appellant and the House Treasurer (and, perhaps, House President) with the Resident Adviser as observer and adviser. The contents and decision of such appeals are to be held in the strictest confidence. When a waiver is granted, it may be assumed unless otherwise specified in the decision, that the appellant retains all social privileges in the house. The hearing panel may recommend full payment, installment payment, or nonpayment. Decisions of the hearing panel may be appealed to the Residential Judicial Board whose decision is final and binding.

N.B.: Joining a fraternity or a sorority, participating in other organizations, taking no interest in activities of the living group, or deciding to spend one's discretionary funds in another way do not constitute valid grounds for exemption from paying dues.

Sanctions. Graduating seniors failing to pay living group dues which have been properly established will be referred to the Residential Judicial Board for adjudication. Other students failing to pay living group dues which have been properly established must move to another location (a) determined by the Office of Residential Life at the end of the fall semester or (b) determined by the general lottery at the end of the spring semester for the following fall term, whichever is appropriate. If entering the lottery in the spring, such students will be grouped behind all other students entered into the lottery.

REVOCATION OF THE HOUSING LICENSE

Residence hall occupancy should be understood as a privilege which is to be maintained under certain standards. This includes abiding by the terms of the housing license as well as upholding general standards of civility, decency, and respect for the rights of other members of the University community.

All terms of the housing license (see Appendix A for copies of the residence hall and Central Campus licenses) are designed to protect the health and safety of students and to provide for the comfort and privacy of students who have contracted to occupy University housing. Any conduct which reflects a serious disregard for the rights,

health, security, and safety of other occupants of University housing will be reason for revocation of this license and/or disciplinary action. Such conduct includes, but is not limited to, tampering with fire and security equipment or use/possession of firearms, weapons, and explosives.

In addition to violators of specific housing license terms, a student who has been a repeated violator of housing terms and/or University regulations or who has shown blatant disregard for others is subject to eviction.

Annual Review of Residential Groups

The following statement of residential group standards and annual review is based on one initially drawn up by the Residential Life Committee to provide a mechanism for the continued improvement and support of the Duke upperclass living groups. The goal of this annual review is to support groups that have satisfactory residential programs and to aid groups which have deficiencies in improving their programs.

The specific terms of this program are as follows:

1. By the last day of March, each upperclass living group must file in the Office of the Dean for Residential Life the following information:

- a. a constitution of the governmental structure of the group
- b. a statement of the goals, standards, and proposed contributions to the residential program
- c. a list of activities through which its members attempted to accomplish its stated goals in the current year
- d. an outline of proposed activities for the following year

2. Early in the the fall semester, the appropriate Dean(s) in the Office of Residential Life will meet individually with each living group president to go over the Annual Review Report which was submitted for their living group the previous spring. The purpose of these meetings is twofold: (a) to advise and inform the new house councils concerning the prior year's successes and failures in their living group's programming, and (b) to introduce student leaders to the programs, funds, facilities and services which the Residential Life Office offers them in their programming efforts.

3. Early in the fall semester, the Dean for Residential Life will submit each living group's Annual Review Report to a special committee which the Dean will convene initially and which will be composed of the following:

- a. an ex officio representative of the Office of the Dean for Residential Life who will chair the group
- b. the President of ASDU or a representative
- c. the President of IFC or a representative
- d. the President of UHA or a representative
- e. the Chairperson of the Residential Judicial Board or a representative
- f. two faculty members appointed by the Dean for Residential Life, one each from Trinity College and the School of Engineering
- g. an academic dean appointed by the Dean of Trinity College

This committee will review and evaluate the program of each living group, examining in particular the following:

- a. attainment of stated goals
- b. quality of group's program
- c. disciplinary record
- d. academic and intellectual atmosphere.

The committee will then submit the results of its evaluation to the Dean for Residential Life. On the basis of the committee's recommendations, and subject to his approval, the Dean for Residential Life will send letters to each living group president

informing him/her whether the group's program was determined to be outstanding, satisfactory, or in need of improvement.

4. After all living groups have received letters notifying them of the results of their review, the committee will meet with the President and one other officer of each of those living groups whose programs were determined to have been in need of improvement. The purpose of this meeting is to offer suggestions for correcting deficiencies in the overall program of the living group. They will be called before the committee again in the spring semester to report on the progress of the living group. If at the spring review a living group continues, in the judgment of the committee, to have an unsatisfactory program, the committee may recommend to the Dean that the living group be placed on probation for a given period of time, during which time the living group will be expected to correct the program deficiencies identified by the committee. At the end of the period of probation, the living group must appear before the committee for review. If the program is again judged to be unsatisfactory, then the committee will refer the matter to the appropriate person for further action (see "Responsibilities of Residential Groups" below).

Responsibilities of Residential Groups at Duke University

(See also "Annual Review of Resident Groups.")

Living groups are responsible for maintaining the standards and adhering to the regulations established by Duke University and adjudicated by the various judicial boards. If such standards and regulations are violated, a living group may be dissolved. The final decision regarding the continuation of a living group rests solely with Duke University.

Living groups may be placed on the status of "warning" by the Offices of the Dean for Residential Life or the Dean for Student Life because of behavior problems which are not considered to be serious enough for judicial action. Living groups which fail to correct the problems which caused the group to be placed on the status of "warning" or as a result of an infraction of University regulations more serious than what would normally result in a warning may be sent to the appropriate judicial board which may recommend to the appropriate dean that a living group be placed on "probation." The status of probation shall be imposed for a period of not longer than two semesters.

Living groups may be placed on "interim suspension" by the Offices of the Dean for Residential Life or the Dean for Student Life and the matter forwarded to the appropriate judicial board for violation of the status of probation, for serious infractions of University regulations, for repetitive failure to submit required information to the University, for continued behavioral problems, or for continued failure to meet financial obligations. The appropriate judicial board then may recommend to the appropriate dean that a living group be placed on suspension. Any judicial body on its own initiative may also recommend suspension of a living group to the appropriate dean. It shall be the decision of the Dean as to whether a living group is placed on suspension and that decision may be appealed to the Vice-President for Student Affairs. The Vice-President's decision shall be final and binding. During any period of suspension or interim suspension, the suspension shall be for a period of no less than two weeks.

A living group alleged to be in violation of the terms of a suspension or alleged to have committed a violation of University regulations deemed serious enough by the Dean for Residential Life or the Dean for Student Life to so warrant will have a special dissolution hearing conducted by the Office of the Dean for Residential Life. In addition, no living group will be placed on suspension for consecutive semesters; a living group committing an offense that might otherwise be cause for suspension during the semester following a suspension will also have a special dissolution hear-

ing conducted by the Office of the Dean for Residential Life. The dissolution hearing panel shall be composed of three representatives from the Division of Student Affairs, the President of the Interfraternity Council, the Panhellenic Council, or the Upperclass House Association as appropriate, and a faculty member. The panel shall report its recommendation to the Dean for Residential Life. It shall be the decision of the Dean as to whether a living group is dissolved and that decision may be appealed to the Vice-President for Student Affairs. *The Vice-President's decision shall be final and binding.*

Housing Policies for Selective Living Groups and Their Members

The following housing policies for selective living groups are gathered together from the February 26, 1981 Report of the Student Affairs Trustee Committee in response to the Residential Life Section of *Directions for Progress*; "Social Fraternal Organizations Policies and Procedures, Duke University, July 1, 1979;" and "Residential Life: Policies and Procedures for Undergraduate Students, 1985-86."

Duke University is under no obligation to supply housing to any fraternity or sorority at the time of installation on the campus. While the Dean for Residential Life will consider the requests for housing from recognized fraternities or sororities, the University is under no time constraints to provide such housing.

In accordance with the guidelines adopted by the trustees in 1981, there is to be no greater number of fraternity living groups chartered. Furthermore, there is a 50 percent ceiling on the number of upperclass bed spaces on campus allocated to men and women's selective living groups (the number of selective bed spaces for men would be no more than 50 percent of the upperclass men's spaces on campus).

POLICIES REGARDING SPACE ALLOCATED TO AND FILLED BY FRATERNITY LIVING GROUPS

1. All fraternities are expected to fill 100 percent of their sections' bed spaces with initiated members of the fraternity ("brothers"). N.B.: Only initiated brothers count toward fulfillment of this housing obligation; "friends of the house" (see 2b. below) and pledges do not count toward fulfillment of this obligation.

2. If a fraternity fails to fill 100 percent of its section's bed space with initiated members, but does fill 90 percent or more of its bed space with initiated members, the following rules apply:

a. the Office of Residential Life may elect to use any open spaces to house fraternity men from other fraternities;

b. if the Office of Residential Life does not elect to house fraternity men of its choosing to fill the unoccupied spaces, the fraternity may fill its unoccupied spaces with "friends of the house;" i.e., independent men who, upon mutual agreement with the fraternity, choose to live in the fraternity section, pay the dues required of them by the fraternity, and have social privileges within that selected group.

3. If a fraternity fails to fill 90 percent of its section's bed space with initiated members of the fraternity, the following rules and procedures apply:

a. the Office of Residential Life may, at its discretion, convene hearings to review:

i. the fraternity's continued presence in its current section and the question of relocation to a smaller section;

ii. the fraternity's continued presence in any University housing and the question of placing the fraternity in nonresidential status; or

iii. the fraternity's continued recognition as a living group and the question of revocation of the fraternity's charter.

4. Should the number of members exceed the space in the allocated section, the excess members (to be determined by the living group) would find it necessary to be assigned space in another fraternity section which has available space, to move to proportionately allocated Central Campus Apartment space, or to move off campus.

5. Rooms in selective houses that are identified by the Office of Residential Life as being large enough to be expanded from singles to doubles or doubles to triples may be so expanded upon election by the selective group or by institutional need as may be determined by the University.

6. Each selective living group is required to submit to the Housing Coordinator in the Office of Residential Life before November 15 (for spring semester) and February 15 (for fall semester) a list of eligible initiated members who will be living in the section for the following semester.

POLICIES REGARDING WHERE MEMBERS OF FRATERNITY LIVING GROUPS MAY RESIDE

1. Members of a fraternity living group may reside only in the section of residence halls allocated to their group unless the number of members exceeds the space.

2. Any members unable to live in their section because their living groups have more members than beds, must either be assigned space in another fraternity with available space, must move to proportionately allocated Central Campus Apartments, or must move off campus. Those students moving off campus have the option of retaining their residential status if they arrange with the Housing Coordinator in the Office of Residential Life to have their housing deposits held for reinstatement in housing when space within the living group becomes available.

POLICIES REGARDING SPACE ALLOCATED TO AND FILLED BY NONFRATERNAL SELECTIVE LIVING GROUPS

1. All nonfraternal selective living groups are expected to fill 100 percent of their sections' bed spaces with members whom they select.

2. If the group fails to fill 100 percent of its section's bed spaces with members, the Office of Residential Life may, at its discretion, use the open spaces to house other students.

3. If the group fails to fill 90 percent of its section's beds spaces with members:

- a. the Office of Residential Life may, at its discretion, permanently reallocate any or all empty spaces to other students
- b. the Office of Residential Life may, at its discretion, convene hearings to review:

- i. the living group's continued presence in its current section and the question of relocation to a smaller section;

- ii. the question of whether or not to change the selective living group to nonselective status by which students are then assigned to the section by the Office of Residential Life.

4. Rooms in selective houses that are identified by the Office of Residential Life as being large enough to be expanded from singles to doubles or doubles to triples may be so expanded upon election by the selective group or by institutional need as may be determined by the University.

5. Each selective living group is required to submit to the Housing Coordinator in the Office of Residential Life before November 15 (for spring semester) and February 15 (for fall semester) a list of eligible members who will be living in the section the following semester.

Student Life



Duke University expects and requires of all its students full cooperation in developing and maintaining high standards of scholarship and conduct. Each student is subject to the rules and regulations of the University as currently in effect or, from time to time, are put into effect by the appropriate authorities of the University.

Any student, in accepting admission, indicates his/her willingness to subscribe to and be governed by these rules and regulations and acknowledges the right of the University to take such disciplinary action, including suspension or expulsion, for failure to abide by the regulations or for other conduct adjudged unsatisfactory or detrimental to the University.

Responsibility for prescribing and enforcing rules and regulations governing student conduct rests ultimately with the Board of Trustees of Duke University, and, by delegation, with administrative officers of the University and of the schools and college. In the undergraduate college and schools, as well as in the University as a whole, many of these rules have been established over the years by cooperative action between students and administrative officers, and in the case of some rules, with participation of faculty members as well. Representative student organizations, such as student governments and judicial boards, and more recently, community-wide bodies of students, faculty, and administrators, have initiated academic and nonacademic conduct; and these proposals have been accepted by colleges and University officers and have become a substantial, if not all-inclusive, body of rules governing student life at Duke.

Similarly, the enforcement of rules in the undergraduate schools and college has traditionally been a cooperative endeavor of students and administrative officers, as well as faculty members who have participated in review and appeals committees and have advised with college and University officers about appropriate standards and procedures in such matters. The judicial structure of the University consists of a University Judicial Board, a Judicial Board for each of the communities within the University, and a Judicial Board for the residential units.

The judicial structure formalizes the tradition of shared participation by various members of the University and college community. Its viability, however, is dependent upon a mutual recognition by all members of the community of the need for high standards of scholarship and conduct, a willingness to exercise the personal and corporate responsibilities that accompany such recognition, and an appreciation of the different roles and responsibilities played by various members who participate in the life of the community. This last factor relates particularly to the role of students in determining and supporting high standards. In addition to the agreed upon monitoring and enforcement procedures outlined, the University administration reserves the right to intervene as needed.

If you have any questions concerning University regulations, the judicial structure or procedure, contact Vice-President William J. Griffith (684-3737), 106 Flowers, Dean Sue Wasiolek (684-6488), 109 Flowers; or Dean Richard Cox (684-6313), 209 Flowers.

The Undergraduate Community

Students in Trinity College and the School of Engineering constitute an undergraduate community whose members are subject to the Undergraduate Community Code. Violations of the code and certain University regulations are adjudicated before the Undergraduate Judicial Board, composed of representatives of the student body, the faculty, and the administration. The constitution of the board and the procedural safeguards and rights of appeal guaranteed to students are set forth in Appendix C. Also provided is an alternative procedure for hearing certain cases by the Dean for Student Life alone or by that officer's appointee as well as an appeal procedure. The judicial code which follows was drafted and approved by the Judicial Review Committee during the spring semester, 1980 and amended during the spring semesters, 1982 and 1983.

THE JUDICIAL CODE OF THE UNDERGRADUATE COMMUNITY

Paramountcy of State and National Law. On November 21, 1852, the General Assembly of North Carolina amended an act to incorporate Union Institute in order to create a Board of Trustees in perpetuity for Normal College then located in Randolph County. The amended act provided that the trustees could grant degrees and "do all other things for an institution of learning not inconsistent with the laws of this State and of the United States." The act was subsequently amended in 1859 to permit a change in the institution's name to Trinity College and again in 1924 when Duke University was established.

Since 1852 the Trustees of Duke University and their predecessors have been legally empowered to act "not inconsistent with the laws of this State and of the United States." Thus, to this date all officers of Duke University and those to whom their powers may be formally delegated are bound by laws of North Carolina and those of the United States.

The University is not an island. Students, faculty, administrators, and Trustees alike are subject to state and federal laws. Acceptance of admission to any of the undergraduate schools or colleges of this University carries with it the assumption of a sense of responsibility for the welfare of the community. Also assumed are obligations on the part of each individual to respect the rights of others, to protect the University as a forum for the free expression of ideas, and to obey the laws of the state and nation.

Acts in violation of North Carolina and United States law are necessarily in violation of the Undergraduate Judicial Code. Such acts when committed on University premises are within the cognizance of the Undergraduate Judicial Board unless otherwise expected. When committed off the University premises they may fall within the board's jurisdiction if constituting a direct or indirect threat to the University community whether or not the offense results in action by a regular civil or criminal court.

Proceedings under the Judicial Code of the Undergraduate Community before, during, or after any which may occur in the regular state or federal courts do not subject a student to "double jeopardy" because such jeopardy arises only in criminal law proceedings. Governments alone, not the University, enforce the criminal law. Action by the board or other University agencies enforce the terms under which a student has accepted admission to Duke University and all sanctions imposed relate to a student's status at the University.

Although the laws of North Carolina and the United States are incorporated in the Judicial Code, enumerated below are common infractions lying within the juris-

diction of the Undergraduate and Residential Judicial Boards. Conduct in violation of the code is punishable by sanctions contained in Appendix C, Art. IV (K) and Appendix E, Art. III of this bulletin.

I. Academic Dishonesty

A. Plagiarism: Expropriation of words, phrases, or ideas of another without attribution for the benefit of one who engages in the act of expropriation. (See "Use and Acknowledgement of Sources" in this bulletin.)

B. Cheating:

1. Obtaining access, without the instructor's permission, to an examination question or questions prior to the instructor's distribution of the examination.
2. Copying or attempting to copy during an examination from another's work in progress or completed, handwritten, typed, or published without consent of the instructor.
3. Without the instructor's permission, collaborating with another, knowingly assisting another or knowingly receiving the assistance of another in writing an examination or in satisfying any other course requirement(s).
4. Committing fraud on a record, report, paper, examination, or other course requirement to be submitted to or in the possession of an instructor.
5. Submission of multiple copies of the same or nearly similar papers without prior approval of the several instructors involved.
6. In the satisfaction of any course requirement, failure to adhere to an instructor's specific directions with respect to the terms of academic integrity or academic honesty for that course requirement.

II. Assault and/or Battery

A. Battery: Any use of physical force against a person without his or her consent.

B. Assault: Any threat of the immediate use of any degree of unauthorized physical force or an attempt to use such force which threatens or actual attempt gives rise to a reasonable apprehension of force against the person threatened as perceived by that person. (See also "University Regulations and Policies: Hazing" in this bulletin.)

III. Taking, Converting, and Selling

A. Theft: Any wrongful physical taking and carrying away of the personal property of another without the rightful owner's consent with an intention to deprive the owner of its use.

B. Larceny: Any wrongful physical taking and carrying away of the personal property of another without the rightful owner's consent and with an intention to convert it to the use of the taker and into the taker's own property or to convert it to the use of and ownership of a third party.

C. Embezzlement: Fraudulent conversion of another's personal property by one to whom the owner trusted it.

D. Fencing: Knowingly receiving or concealing stolen property.

IV. Property Damage: Willful and malicious damage to real or personal property owned by others including that owned by Duke University, especially fire equipment, as well as that owned by members of the University community and by visitors to the University. (See "University Regulations and Policies: Fire Equipment" in this bulletin and "Care of Dormitory Rooms and Adjacent Campus Areas.")

V. Breaking and/or Entry

- A. Breaking: Any bodily action or attempt by means of such bodily action intended to create an opening for access to real or personal property without consent of the owner of such property.
- B. Entry: Any physical bodily presence within real or personal property without consent of the owner. Such illegal entry includes trespass on unauthorized areas. (See "University Regulations and Policies: Roof and Ledge Areas, Unauthorized Access.")

VI. Disorderly Conduct

- A. Any willful act, committed without justification or excuse, that unreasonably disrupts the normal public use of public areas, or that substantially disturbs the peace and order of the University community. (See "University Regulations and Policies: Alcoholic Beverages" and "Noise.")
- B. Any grossly unreasonable and reckless conduct in the handling of things or substances ordinarily regarded as inherently dangerous or capable of becoming dangerous to other persons or to their real or personal property.

VII. Fraud

- A. Any intentional misrepresentation of fact in an attempt to induce another to surrender a right or property or to authorize the conferring of a benefit in reliance upon the misrepresentation.
- B. Forgery or alteration of documents, including course examinations, papers, or other required exercises, in an attempt to obtain a right or benefit or property.
- C. Obtaining a right or benefit or property under false pretenses.
- D. Unauthorized misuse of otherwise valid documents.

VIII. Bribery: Corruption of another for personal gain.

- IX. Attempt: Devising or arranging means or measures necessary for commission of a prohibited act or an overt step undertaken to commit a prohibited act.

X. Contempt

- A. Failure to comply with direction, orders, or commands of any University judicial or police authority, or any academic or administrative official of the University acting in an official capacity. (See "University Regulations and Policies: Library Control Desk Inspections" in this bulletin.)
- B. Knowingly furnishing false information to any such authority or official of the University acting in an official capacity.

- XI. Illegal Possession: Any transporting to or storing on the campus or possession of firearms, weapons, explosives, or fireworks. (See "University Regulations and Policies: Fireworks, Other Explosives and Weapons" in this bulletin.)

- XII. Accessory to Commission of a Prohibited Act: Aiding or abetting or otherwise acting as an accomplice to commission of any prohibited act.



University Regulations and Policies



Students should be familiar with the Judicial Code of the undergraduate community and with the following regulations and policies of the University. Violations are matters which are subject to adjudication before the Undergraduate Judicial Board.

DUKE UNIVERSITY REGULATIONS REGARDING ALCOHOLIC BEVERAGES AND EVENT REGISTRATION

INTRODUCTION

The University has adopted the following regulations to govern the use of alcoholic beverages by students and the registration of events on its campus. This policy applies to two types of events: (1) those at which alcoholic beverages are present; and (2) those required to be registered, regardless of whether alcoholic beverages are present.

The event registration provisions apply only to registering an event with the Office of Student Life to insure that the sponsoring organization and/or individual(s) is (are) informed of all regulations pertaining to the use of alcohol and to the noise policy. This policy *does not* satisfy the requirements of reserving space in nonresidential facilities; sponsors must on their own initiative secure the space and satisfy any requirements.

This policy is premised upon the belief that Duke students are mature individuals capable of and willing to follow and enforce the provisions of this policy themselves, with assistance from the Dean for Student Life and Public Safety as set forth below. Failure to accept responsibility which comes from permitting alcohol on campus will result in the University taking appropriate action.

The effective date of this policy is August 15, 1986. The Vice-President for Student Affairs has charged the Dean for Student Life with the responsibility for implementing, interpreting and, in cases deemed deserving by the Dean, making exceptions to these regulations. These regulations may be amended from time to time at the discretion of the Vice-President for Student Affairs.

NORTH CAROLINA LAW (North Carolina General Statute Section 18B-101 *et seq.*)
The following is a summary of Article 3 of the statute.)

Sale to or Purchase by Underage Persons

1. Sale

- a. It is against the law to sell or give beer or wine to anyone less than 21 years old.
- b. It is against the law to sell or give liquor or mixed beverages to anyone less than 21 years old.

2. Purchase or Possession

- a. It is against the law for a person less than 21 years old to purchase or possess beer or wine.

- b. It is against the law for a person less than 21 years old to purchase or possess liquor or mixed beverages.
- 3. Aider and Abettor
 - a. Any person less than 21 years old who aids or abets another in violation of the above regulations shall be guilty of a misdemeanor, punishable by a fine up to \$500 or imprisonment for up to six months, or both.
 - b. Any person over 21 years old who aids and abets another in violation of the above regulations shall be guilty of a misdemeanor, punishable by a fine up to \$2000 or imprisonment for up to two years, or both.
- 4. It is unlawful to use a fraudulent ID or to permit the use of one's ID by another to purchase or possess alcoholic beverages in violation of the above sections.
- 5. It is unlawful to give alcoholic beverages to an intoxicated person.
- 6. Conviction Report sent to Division of Motor Vehicles. Persons convicted of violating the above sections may automatically have their drivers license revoked for a period of one year.

In addition to the North Carolina law regarding the use of alcoholic beverages, Duke University has adopted the following regulations regarding alcoholic beverages and event registration.

DEFINITIONS

- 1. "Alcohol Beverages" — any beverage containing at least one-half of one percent (0.5%) alcohol by volume, including beer, wine, liquor and mixed beverages.
- 2. "Common Container" — any keg, large bottle, punch bowl, trash can or other device used for storing or mixing a quantity of beverage greater than that which can reasonably be consumed by one person (and his/her guest).
- 3. "Event" — a party, concert, or other group social gathering held on the University campus attended by students (e.g., a wine and cheese reception in an academic classroom).
- 4. "Legal Age to Drink" — 21 years of age and older. [Note: While the State of N.C. will not raise the legal age to drink beer and unfortified (table) wine until September 1, 1986, University policy will consider the legal age to drink all alcoholic beverages to be 21 as of August 15, 1986, the effective date of this policy.]
- 5. "Registered Event" — any event held on the University campus will be classified as either registered or unregistered. Events described in Section B.1. of this policy must be registered and must be held in accordance with the provisions of that section of the Policy.
- 6. "Sale" — any transfer, trade, exchange or barter, in any manner or by any means, for consideration.
- 7. "Unregistered event" — any event held on the University campus which is not required to be registered under Section B.1. of this policy is an unregistered event. An unregistered event must be held in accordance with the provisions of Section C of this policy.
- 8. "Use of Alcoholic Beverages" — possession, consumption, distribution, purchase, sale or transfer of alcoholic beverages.

A. GENERAL PROVISIONS APPLICABLE TO ALL EVENTS.

- 1. The use of alcholic beverage is permitted only by those of legal age to drink and in accordance with N.C. law governing alcoholic beverages.
- 2. The sale of alcoholic beverages by students is prohibited. Alcoholic beverages may be sold by the University to students of legal age to drink at licensed premises.
- 3. The use of alcoholic beverages as a prize in a contest, drawing, raffle, lottery, etc. is prohibited.

4. All residential and social groups are responsible for designating a member to participate in an Alcohol Awareness Session at the beginning of each academic year. This representative must recognize that he/she is responsible for disseminating current information concerning the use of alcohol and the existing State and University regulations concerning its use to members of his/her organization.
5. Sponsoring groups and living groups remain responsible for the general tone of their social event, and by majority vote they may adopt regulations more limiting than the laws of the State and the provisions of this policy.
6. Alleged violations of this policy by groups and/or individuals shall be subject to adjudication by the judicial board(s).

B. PROVISIONS APPLICABLE TO REGISTERED EVENTS.

1. Registration

- a. An event sponsored by an undergraduate student group must be registered if any of the following occur:

- (1) scheduling of a nonresidential facility: e.g., Von Canon Hall, Card Gym, quads, etc.;
- (2) participants include individuals other than dues paying members of the sponsoring group and one guest per attending member;
- (3) sound amplification equipment is placed or directed outside (stereo speakers, live bands, etc.) in accordance with University policy; and/or
- (4) attendees at event total 200 or more.

- b. An event sponsored by any other entity must be registered (See B.2.) if any of the following occur:

- (1) scheduling of a facility other than the facility of the sponsor (which may be a facility member, graduate or professional student group, academic department, etc.) with permission from the dean or department head in charge of the facility;
- (2) alcoholic beverages are present and participants include students other than members of the sponsoring group or department and one guest per attending member; and/or
- (3) sound amplification equipment is placed or directed outside (stereo speakers, live bands, etc.) in accordance with University noise policy.

2. The required registration forms may be obtained in the Office of the Dean for Student Life, 109 Flowers, and must be completed and returned for approval to the office 72 hours prior to the event. Call 684-6488 for more information.

3. Alcohol stipulations for registered events.

- a. The University prohibits the distribution of *any* alcoholic beverages at registered functions held in or adjacent to residence halls.

- b. The University prohibits the distribution of alcoholic beverages in non-residential facilities with the following exceptions:

- (1) The Old Trinity Room, Von Canon Hall, Central Campus Multipurpose Room, the Mary Lou Williams Center for Black Culture, and any facility approved by the Dean for Student Life. Alcoholic beverages may be served at these locations, to those of legal age to drink, only during events limited to no more than one guest per attending member. Prior approval to serve alcoholic beverages, including, if desired, the use of common containers, must be obtained from the Offices of the Dean for Student Life and the Assistant Business Manager for Busi-

ness Auxiliaries. If approval is obtained and alcoholic beverages are served, a nonalcoholic beverage other than water must also be served in the same manner. The quantity of the nonalcoholic beverage must be sufficient to meet the demand for it. Individuals may not bring their own alcoholic beverages to these locations.

- (2) In addition, the Dean for Student Life has discretion to approve the serving of alcoholic beverages, to those of legal age to drink, at certain events held in other nonresidential locations (e.g., senior class picnic) on a case by case basis. Before giving this approval, the Dean will take into consideration whether attendees of the event are of legal age to drink, whether access to the event and other functions can be effectively monitored, and whether satisfactory safeguards are in place to comply with North Carolina law governing alcoholic beverages.
 - c. Individuals of legal age may bring their own alcoholic or nonalcoholic beverages to registered events held in the residence halls, on the quad, in Card Gym, or in the Intramural Building. Under these circumstances, the individual will be responsible if he or she furnishes alcoholic beverages to a person not of legal age to drink. Further, individuals may not bring more alcoholic beverage than he/she and one guest might reasonably consume over the course of the event.
4. Monitoring of registered events.
- a. The Dean for Student Life will determine if the sponsoring group will be required to hire Public Safety to perform the monitoring functions *set forth below* for events held in nonresidential buildings. These registered parties are limited to four hours and Public Safety will be required until the facility is cleared of all participants. When Public Safety is not required, the sponsoring group shall be responsible for performing the monitoring function by designating student monitors.
 - b. The necessary monitory functions include:
 - (1) monitor the size of the crowd,
 - (2) prevent outsiders from attending and screen for uninvited guests,
 - (3) maintain order, prevent damage, and identify persons responsible if damage occurs,
 - (4) stop music at the designated closing time, and
 - (5) facilitate the orderly withdrawal of event participants.

C. PROVISIONS APPLICABLE TO UNREGISTERED EVENTS

1. Unregistered events will be governed by the following alcohol stipulations:
 - a. All unregistered events sponsored by an undergraduate student group at which alcohol is present must be held in the residence halls, unless prior approval is obtained from the Dean for Student Life for another location.
 - b. All unregistered events sponsored by any other entity must be held in or adjacent to the facility of the sponsor (which may be a faculty member, graduate student group, academic department, etc.) with permission from the dean or department head in charge of the facility, unless prior approval is obtained from the Dean for Student Life for another location.
 - c. At the unregistered events alcohol may be distributed (i.e., served) to members of the sponsoring group and one guest per attending member of legal age to drink.

- d. If alcoholic beverages are served, a nonalcoholic beverage other than water must also be served in the same manner. The quantity of the nonalcoholic beverage must be sufficient to meet the demand for it.
 - e. If alcoholic beverages are present, the sponsor(s) and/or living group will be responsible if alcoholic beverages are served to a person(s) not of legal age to drink or if alcoholic beverages are served in excessive amounts to any person. If common containers for alcoholic beverages (e.g., beer kegs) are used at the event, the sponsor(s), living group, and/or the purchaser of the container is/are responsible if persons not of legal age to drink are served or serve themselves and is/are responsible if excessive amounts are served to or consumed by any person. The above responsibilities cannot be avoided by the sponsor(s), living group, and/or the purchaser by leaving a common container unattended.
 - f. Individuals may bring their own alcoholic or nonalcoholic beverage to unregistered events. Under these circumstances, the individual will be responsible if he or she furnishes alcoholic beverages to a person not of legal age to drink. Further, individuals may not bring more alcoholic beverages than he/she and one guest might reasonably consume over the course of the event.
2. Monitoring of unregistered events.
 - a. The sponsor(s) or living group shall be responsible for performing the monitoring functions set forth below for unregistered events by designating student monitors.
 - b. The necessary monitoring functions include:
 - (1) monitor the size of the crowd,
 - (2) prevent outsiders from attending and screen for uninvited guests,
 - (3) maintain order, prevent damage, and identify persons responsible if damage occurs, and
 - (4) ascertain that persons not of legal age to drink are not served and do not consume alcoholic beverages.

PARTY AND/OR EVENT REGISTRATION

1. Rationale for Registration of Parties or Events

The registration of parties or events is intended as a mechanism to allow the University community to prohibit illegal and inappropriate behavior on the part of the citizens of the community, to insure that the sponsoring organization and/or individual(s) is (are) informed of all regulations pertaining to the use of alcohol, and to encourage the acknowledgment and assumption of the responsibility which is involved with the use of alcohol.

All residential and social groups are responsible for designating a member to participate in an Alcohol Awareness Session at the beginning of each academic year. This representative must recognize that he/she is responsible for disseminating current information concerning the use of alcohol and the existing state and University regulations concerning its use to the members of his/her organization.

2. Registration procedure

A party or event must be registered if any of the following occur:

- a. scheduling of nonresidential facilities: i.e., Von Canon Hall, Card Gym., quads, etc.
- b. participants include individuals other than dues paying members of the sponsoring organization and one guest per member
- c. sound amplification equipment is placed or directed outside (stereo speakers, live bands, etc.)

- d. alcohol is sold
- e. party or event is advertised
- f. "beer trucks" from local distributors are desired in certain areas of the campus.

The required registration forms may be obtained in the Office for Student Life, 109 Flowers, and must be completed and returned to the office 72 hours prior to the event. If a group is uncertain about the need to register, they should not hesitate to call 684-6488 for information.

Violation of the party registration procedure or failure to conform to the specified limits for a party or event as defined above shall result in suspension of a group's social activities for at least two weeks. This suspension period shall be doubled for each subsequent violation.

Alleged violations of state and University alcohol regulations shall be subject to adjudication by the Alcohol Hearing Committee.

HEARING PROCEDURE

- A. In the event that an individual or group is alleged to be in violation of the North Carolina state law or the University alcohol regulations, a hearing committee shall be authorized to adjudicate the allegation. Such a hearing committee shall be composed of a representative from each of the following organizations or offices:
 - 1. Associated Students of Duke University (ASDU)
 - 2. Association of Independent Houses (AIH)
 - 3. Interfraternity Council (IFC)
 - 4. Panhellenic Council (Panhel)
 - 5. Student Life
 - 6. Residential Life

- B. The hearing committee members will elect a chairperson and the Office of Student Life will be responsible for the necessary paper work and the calling into session of the committee.

- C. An individual or group alleged to be in violation of University or state alcohol regulations has the right to request an administrative hearing conducted by a representative each from the Office of Residential Life and Student Life. The administrative representatives may refuse to hear the case and remand it to a hearing committee.

The hearing committee or the administrative representatives may decide that a case is beyond their jurisdiction and thus remand the case to a more appropriate judicial body.

D. Appeals

Decisions of the hearing committee are final unless appealed to the Vice-President for Student Affairs within one week (seven days) of the written decision. Grounds for appeal are limited to:

- 1. Verdict not supported by the weight of the evidence
- 2. Excessive penalty not in accord with "current University community standards"
- 3. New evidence of a character directly affecting the verdict, but on which the original tribunal has refused a hearing
- 4. Error in applying or interpreting the rule under which the case was originally tried

E. Sanctions

- 1. Suspension of group social activities
- 2. Fines. All revenue from fines will be directed to the Residential Programmatic Fund
- 3. Group social probation

4. Volunteer service for the Duke/Durham community
5. Written reprimand
6. Required or recommended meeting with the Health Educator or another appropriate University official

PARTY PROMOTION

By choosing to serve beverages containing alcohol as part of a social function, you and your group or organization assumes certain responsibilities beyond direct University regulation.

Test cases involving common law precedents and the dispensation of alcohol beverages are changing the definition of who is liable for a drinker's actions to include the general category of "social hosts." A social host may be a fraternity, a residence hall organization, a private citizen, or any combination of the preceding.

For example, serving alcohol to a minor who subsequently breaks his leg could render an individual or group liable for the minor's medical bills. Serving an individual who is "already" or "obviously" drunk and who subsequently has an automobile accident could render an individual or group liable for the injury or death of third party victims of the accident, or any property damage resulting from the accidents.

In general, CREATING OR PROMOTING ANY SET OF CIRCUMSTANCES WHICH ENCOURAGE ANY OF YOUR GUESTS TO CONSUME ALCOHOL TO THE POINT OF INTOXICATION CAN HAVE FAR REACHING NEGATIVE CONSEQUENCES OF A MOST SEVERE NATURE.

Legal proof of negligence in the dispensation of alcohol usually involves the consideration of wide variety of factors, including the manner in which hosts promote social functions where alcohol is served.

In addition to the responsible monitoring of the social event itself, IT IS IMPERATIVE THAT YOU AND YOUR GROUP OR ORGANIZATION DO NOT PROMOTE YOUR EVENT IN SUCH A MANNER THAT A POTENTIAL GUEST MIGHT REASONABLY BELIEVE YOUR SOCIAL EVENT IS AN INVITATION TO BECOME INTOXICATED.

SPECIFICALLY: FLYERS, BANNERS, AND SIGNS WHICH ADVERTISE SOCIAL EVENTS WHERE ALCOHOL WILL BE SERVED MUST NOT OVERTLY OR COVERTLY STATE OR IMPLY AN INVITATION TO PARTICIPATE IN EXCESSIVE DRINKING.

CAMPUS BANNER POLICY

Requests for hanging banners on University buildings must be jointly approved by Housing Management and the Physical Plant Office. If approved, a banner may be hung for a period of not more than three days. The banner must be removed by the sponsoring organization within 24 hours of the event that it advertises. In the event that there is no date for the banner, then a three day maximum will be established for its display. If the group fails to remove the banner within the designated time, the University will remove it at a cost to the responsible organization or individuals. Where no sponsoring organization or individual may be identified, banners will be taken down immediately.

CONFERENCES AND CONVENTIONS

Invitations to individuals or to organizations outside the University to hold conferences or conventions on campus must be discussed with and approved by the Dean for Student Life well in advance of the extension of the invitation by the prospective host or host group at Duke. It is the established policy of the University not to use its dormitory facilities for the housing of convention guests during the

academic year. The University does, however, reserve the right to use dormitory rooms for special guests during announced vacations.

DISCRIMINATION, APPEAL PROCEDURE FOR STUDENTS EMPLOYMENT

Complaints from students of discrimination regarding hiring practices should be filed in writing with the Office of Placement Services, 214 Flowers Building. A staff representative of the Office of Placement Services shall notify the University Equal Opportunity Officer in writing of the complaint within ten (10) working days. The Equal Opportunity Officer will investigate the complaint, notify the Office of Student Affairs and the respective college or school of the student, and attempt to reconcile the parties. Should the complainant feel that the complaint of discrimination has not been remedied after receiving a written evaluation from the Equal Opportunity Officer, appeal may be made to the respective dean of the student's college or school.

DOGS ON CAMPUS

All dogs found running loose on campus or tied to an obstacle with the dog unattended by the owner will be removed from the campus to the Durham County Dog Pound by a county official. Upon claiming the dog the owner will be required to furnish identification. The Department of Public Safety will refer the names of such students to the appropriate dean; employees will be referred to their department head. Other persons who indicate an unwillingness to cooperate with Duke University regulations in this matter will be given trespass warnings.

DRUGS

Duke University prohibits its members to possess, use, or distribute illegal drugs, including opiates, barbiturates, amphetamines, marijuana, and hallucinogens, except for legally authorized possession and distribution of drugs of the classes specified. In addition, the presence and use of many of these drugs within the University community are contrary to the intellectual and educational purposes for which the University exists.

The University recognizes that ignorance or innocence concerning such drugs threatens the safety of members of its community. It therefore seeks to provide as much information as it can concerning the consequences of harmful drugs. The University recognizes also that the illicit use of drugs may reflect emotional problems and is prepared to assist its members involved in their use through medical and psychiatric counseling. Nevertheless, the University considers a violation of the drug prohibition a serious matter and reserves the right to take action appropriate to the circumstances of each case.

Action taken by the University in all cases of drug violation will be guided by a concern both for the emotional and physical welfare of the person involved and for the maintenance of a suitable educational environment for all members of the University. See Appendix F for rules governing drug violations.

FIRE EQUIPMENT

In an effort to provide adequate protection, fire extinguishers are located in all residence halls. Since the installation of this equipment, numerous fires have been quickly controlled, avoiding injury or loss of life. The potential impact of having fire extinguishers vandalized or stolen is clear; yet, each year individuals continue to disregard the safety and rights of others by destroying and tampering with this equipment.

Damage and/or theft of fire equipment is punishable under North Carolina General Statute 14-260 which carries a maximum penalty of six months imprisonment

and/or \$500 fine. In addition, students who have allegedly misused or vandalized fire equipment may have their housing licenses revoked and/or be referred to the Undergraduate Judicial Board. Judgements rendered by this board may result in the loss of housing privileges and/or other punishment.

It is University policy that dormitories be billed for theft and/or vandalism of fire extinguishers within the residence halls.

To further assure life safety, fire alarm systems are located in each residence hall at convenient locations to alert the occupants in case of fire. Turning in false alarms may result in unnecessary deployment of fire vehicles and the penalties for turning in false alarms or tampering with the alarm system are the same as those listed above. (See section on "Revocation of the Housing License," page 33.)

FIREWORKS, OTHER EXPLOSIVES, AND WEAPONS

The General Statutes of North Carolina strictly prohibit the possession of firearms, explosives, and weapons on any university campus. Students are not permitted to bring to the campus or store on the campus any weapon, including any gun, rifle, pistol, explosive, switch-blade, knife, or dagger. Students may not possess fireworks of any kind. If found to be in violation of this policy, students may have their housing licenses revoked and/or be referred to the Undergraduate Judicial Board. (See section on "Revocation of the Housing License," page 33.)

HAZING

Duke University considers hazing to be a serious infraction of University regulations. Hazing Policy: Any action taken or situation created, intentionally, whether on or off fraternity, sorority, or University premises, to include physical discomfort, embarrassment, harassment, or ridicule. Such activities and situations include but are not limited to paddling in any form; creation of excessive fatigue; physical and psychological shocks; road trips, or any other such activities carried on, in or outside the confines of the University; wearing publicly apparel which is conspicuous and not normally in good taste; engaging in public stunts and buffoonery, morally degrading or humiliating games and activities which are not consistent with fraternal law, ritual, or policy or the regulations and policies of Duke University. (Modified from: Statement on Hazing, Fraternity Executive Association). Students should also be aware that hazing is a misdemeanor under North Carolina state law and is punishable by up to a \$500 fine and/or six months imprisonment. The action of even one member of the group may constitute hazing by the fraternity or sorority. Any fraternity or sorority convicted of hazing may be warned, placed on probation, or the charter of the group suspended for a period of time or permanently. Individuals responsible for hazing are also liable for action by the Undergraduate Judicial Board.

IDENTIFICATION CARDS

Undergraduate students are issued identification cards (the Duke Card) which they should carry at all times. The cards are the means of identification for library privileges, student health services, athletic events, and other University functions or services open to them as University students. These cards also serve to purchase food on a selected meal plan or other food and nonfood items on the flexible spending account. Students will be expected to present their cards upon request to any University official or employee.

The cards are not transferable, and fraudulent use may result in loss of student privileges or suspension. A student should report the loss of this card immediately to the Office of the Registrar, 103 Allen Building. The cost of a new Duke Card is \$5.

LIBRARY CONTROL DESK INSPECTIONS

In order to guarantee the orderly functioning of the Perkins Library for the benefit of all members of the University community, control desk attendants have been established at the library's principal exit and are authorized to examine all books and other library materials which persons leaving the building may be carrying in hands, briefcases, or bags to determine if they are properly charged. Anyone who refuses to permit his or her books to be examined may be denied further use of the library. Student offenders will be reported to the appropriate dean of the University, who is authorized to refer such offenders to judicial boards or to take independent disciplinary action, including penalties, up to and including suspension, appropriate to the seriousness of the offense.

LIBRARY POLICY CONCERNING FOOD, DRINK, AND TOBACCO IN PUBLIC AREAS.

This policy is meant to decrease:

- a. Damage to books and furnishings
- b. Infestation of the building and the collection by vermin
- c. Deterioration of a pleasant, studious environment
- d. Cost of housekeeping

The policy applies in *public areas* of the library to all people, including University staff, faculty, students, and other persons working in or using the library. Public areas include the several study rooms, seminar rooms, all carrels, elevators, hallways, restrooms, stairwells, and all book stacks. Also, this policy applies to everyone when walking through public areas of the library.

1. No smoking or other tobacco use is allowed except in designated areas.
2. No food or drink is to be consumed except in designated areas.
3. Food, drink, and tobacco will be subject to confiscation by library staff if used in undesignated areas.
4. Any food and drink brought through the library must be concealed; open containers are subject to confiscation by library staff.

MEDICAL CENTER, SMOKING AND PUBLIC TRAFFIC

Smoking is prohibited in the Medical Center, including the buildings of the School of Nursing, except in certain specified areas which are marked "Smoking Permitted." Smoking is prohibited in all other areas, including corridors, patient examination and treatment rooms, elevators, nursing stations, stairwells, laboratories, libraries, classrooms, and lecture halls.

If the hospital must be used as a shortcut between campus and Hanes House/Hanes Annex/Trent Hall/Pickens, *please be quiet, orderly, and mindful of the patients, their families, and the nature of a hospital environment.* Use the entrance closest to your point of business and do not linger or congregate. Due to patient activity in the clinic area, students are requested not to enter or exit through door #4, Baker House. Bicycles and sports equipment should not be brought through the hospital. As would be expected, shoes and shirts are required.

NOISE (DISORDERLY AND DESTRUCTIVE BEHAVIOR)

This policy has been developed after consultation with the Association of Duke University, the Interfraternity Council, the Upperclass House Association, the Residential Judicial Board and the Residential Policy Committee. This policy is based on the belief that all persons residing in the community have a responsibility to respect the rights, health, security, and safety of other community members and that persons

who repeatedly fail to respect others should no longer be afforded the privilege of residing in University housing.

Disorderly and/or destructive behavior by students is prohibited.

1. Any student accused of destroying personal or University property is liable for judicial action before the Residential Judicial Board or before the Undergraduate Judicial Board, as appropriate.
2. Quiet hours will be in effect throughout the campus except during the hours of 5:00 P.M. to 1:00 A.M. on Friday, from 1:00 P.M. to 1:00 A.M. on Saturday, and from 1:00 P.M. to 6:00 P.M. on Sunday. Quiet hours are in effect twenty-four hours a day at Central Campus Apartments.
 - a. Violations of quiet hours will be adjudicated by the Residential Judicial Board.
 - b. Even during the hours listed above, students are expected to continue to respect the rights of others.
 - c. During quiet hours, students who are disturbed should attempt to resolve the situation by contacting the other parties involved; or, if needed, seek the assistance of house officers or Resident Advisers. In some areas of campus, an internal system for dealing with disturbances has been established by house officers (including distributing lists of house officers and RAs to contact) which has worked quite well. All quadrangle areas are encouraged to implement such a procedure. During the hours listed above, the Public Safety Officers and student monitors will continue to respond to complaints and will notify those creating a disturbance that a complaint has been made. However, complaints made during the time periods noted above when quiet hours are not in effect will not be considered as violations of the policy unless extenuating circumstances are present such as noise interfering with classes which are in progress. If necessary, complaints may be registered by calling the Public Safety Office at 684-2444. Complainants should provide their name and location when calling the Public Safety Office. Such information will remain confidential. In cases going before the Residential Judicial Board, the Public Safety Incident Report will serve as the plaintiff. The chairman of the Residential Judicial Board (or designate) may contact the complainant to verify the incident and request additional information. If an anonymous complaint is made, the Residential Life Office will send a letter notifying the group or individuals that a complaint was made. If a group or individual receives two or more actionable noise complaints (where the complainants have been identified) and is found guilty by the Judicial Board, then all additional anonymous complaints will be made known to the board to assist in determining the sanction.
 - d. The Public Safety Officer, RA, or House Officer will forward to the Dean for Residential Life a report of all noise complaints. In those cases where students have cooperated when contacted by the Public Safety Office, a letter will be forwarded to the students concerned or to the President of the living group informing them of the complaint. The students will also be informed that any further complaints during the remainder of the academic year will be forwarded to the Residential Judicial Board for adjudication.
 - e. Should the Public Safety report indicate that the students had been warned and that the noises persisted and necessitated a return to the same student room or house in the same evening, then the report will be sent directly to the Residential Judicial Board for adjudication.

- f. Residential and quad parties are permitted provided that such parties have been approved under procedures as implemented through the Office of the Dean for Student Life.
- g. Under no circumstances during quiet hours may stereo speakers be placed or pointed outside. During nonquiet hours, an individual or living group may only place or point speakers outside for a function that has been approved by the Dean for Student Life.

It should be noted that residents are responsible for actions of their guests and that living groups as a whole may be held responsible for violations of this policy. The Residential Judicial Board when adjudicating a violation of the above policy will follow its established procedures and may impose the established sanctions including fines and/or eviction from the residence halls.

PAINTING POLICY

There has been a long-standing tradition of allowing student organizations and individuals to paint the East Campus bridge. Students are reminded that this activity may not extend beyond the bridge to include the painting of roads, sidewalks, telephone poles, lamp posts, trees, or any other University or municipal areas. Any groups or individuals identified as being responsible for painting anything other than the bridge will be charged for clean up and may also be subject to judicial action.

PARTIES IN RESIDENTIAL AREAS OUTSIDE OF RESIDENCE HALLS AND "BEER BLASTS"

See "Alcoholic Beverages" in this bulletin.

PICKETS, PROTESTS, AND DEMONSTRATIONS

See Appendix E.

POLICY ON USE OF SEGREGATED FACILITIES

It is University practice not to discriminate in any way on the basis of race, creed or national origin. This statement covers official activities sponsored, financed and controlled by University personnel and campus organizations, whether these activities are held on or off campus. If they are held off campus, they must not utilize facilities where discrimination is practiced. Naturally the University will not attempt to dictate to individual students, faculty members, or private groups how they should conduct their personal affairs outside the University.

The above policy applies to all social functions sponsored by undergraduate residence hall campus organizations. The failure of student groups to comply with this policy may result in suspension of their social privileges. Repeated offenses by campus organizations could result in the revocation of their charters.

POLICY FOR REGISTERING "THEME" PARTIES

Any theme party held in the residence halls which involves the introduction of "foreign materials" (such as hay, bamboo, paper draping, etc.) as party decorations must be approved by the Safety Office of the Duke Public Safety Department. Because such materials may prove to be fire hazards, it will be necessary to have clearance from the Director of the Safety Office.

ROOF AND LEDGE AREAS, UNAUTHORIZED ACCESS

The only authorized persons permitted on the roof and ledges of University buildings are maintenance personnel and certain other University officials. Students

found in these areas will be referred for judicial action and/or may be subject to the immediate revocation of their housing license.

POLICY CONCERNING FILMS AT DUKE

Films—open to the public—are shown every evening of the academic year August 26–May 5, graduation. During the two summer sessions there are at least two evenings per week of film showings.

Presenters

A. Film Committee Presenters

The two major film committees responsible for carefully chosen film series are (1) the D.U.U. Freewater Film Series, presenting 16mm film (in multiple showings of two or three presentations each evening) on Tuesday, Thursday, and Friday in the Film Theater, Bryan University Center, and on certain occasions children's films on Saturday morning; and (2) Quadrangle Pictures (Quad Flicks)—the oldest film program on campus presenting 35mm films on each Saturday and Sunday (two showings each evening) in Page Auditorium.

Participation in these two committees is open to students, faculty, and staff. For Freewater Films, contact the program adviser or the chairperson of the D.U. Union, 101 Bryan University Center, ext. 2911. For Quadrangle Pictures, contact the Director of Cultural Affairs, 109 Page, ext. 5578. Both groups solicit the opinions of the student body and faculty in the selections of films and are most happy to cooperate whenever possible in bringing films requested by departments and organizations.

During the two summer sessions, Freewater shows films on Sunday evenings and Quadrangle Pictures on Wednesday evenings, both in the Film Theater, Bryan University Center.

B. General Campus Presenters

Monday and Wednesday evenings may be utilized by departmental groups, residential units, fraternities and sororities, and by organizations chartered by ASDU to have public showings of 16mm films in the Film Theater. If admission is charged, the sponsoring group must use the Film Theater of the Bryan University Center, for which appropriate tax payment has been made to the city. The presenters should be aware of and should adhere to the following regulations:

1. All film presentations must be sponsored by the above organizations with funds from admission sales going to the respective organizations.
2. No film showing may be presented for an individual's self-aggrandisement.
3. Permission is withheld from film presenters for the showing of x-rated films until justification for their presentation is reviewed. Other films which, regardless of rating, are shown or have been found to encourage disruptive behavior may be restricted.
4. All film presenters must employ the services of a house manager and a projectionist, both provided by the Building Manager, Bryan University Center (office adjacent to the bank machines on the intermediate level, 684-2656). These employees will be present throughout the entire presentation. An estimate of cost will be available from the building manager.
5. All public announcements for the film showings (such as flyers, posters, calendar, and *Chronicle* announcements) must be made to display clearly the sponsoring group's official name. Advertising for all film presentations is restricted to the campus media.

Film Sources. A complete up-to-date collection of film catalogues may be found in the Office of Cultural Affairs, 109 Page Building, and the D.U. Union Office, 101 Bryan University Center. The reference room of Perkins Library also has extensive files of film catalogues and other relevant reference material. The Durham County Library (on north Roxboro Street) also has projectors (movie and slide) for rent. You must have a library card to rent these. Catalogues may also be ordered directly from film companies.

Locations for Film Showings. The auditorium on the Duke campus authorized for film showings for which an admission is charged is the Film Theater of the Bryan University Center. This hall is covered by the payment of a privilege license tax paid by Duke University to the city of Durham and to the state of North Carolina. To charge admission to films shown in other areas is in violation of state law and brings into question the legal position of the University.

Free Films. If no admission is charged and no donation is received, films may be publicly shown in any appropriate room on campus, but their scheduling must adhere to other rules applicable to general campus film presenters to prevent conflicts.

Possible Film Restrictions

A. X-Rated Films Policy—Permission is withheld from film presenters for the showing of x-rated films until justification for their presentation is made through appeal.

1. An appeal by the Freewater Film Society and by other organizations under the jurisdiction of the University Union will be reviewed by the board of the University Union whose decision will be communicated to the Vice-President for Student Affairs for final review.
2. An appeal by other chartered organizations will be reviewed by the Vice-President of Student Affairs directly. All reviews and subsequent decisions will take into account, among other considerations, the objectives to be served by exhibiting the film, its educational value, and the extent to which the request can be supported by a social or aesthetic justification. When, in response to an appeal, permission is granted to present an x-rated film, the following procedures will be required: the Vice-President for Student Affairs will (a) decide whether or not the film in question shall be listed in the Duke University weekly *Calendar*, (b) designate what kind of identification may be required of members of the Duke University community and/or their guests, (c) decide whether or not a representative of the Public Safety Office may be required for the purposes of assisting the sponsoring group, at the latter's expense. In addition, those attending must show proof of age that complies with North Carolina state law.

B. Other Film Restrictions—The decision to withhold the scheduling of films which, regardless of rating, are shown or have been found to encourage disruptive behavior may be made by:

1. The University Union board for films proposed by the Freewater Film Society and by other organizations under its jurisdiction.
2. The Film Board of the Office of Cultural Affairs for films proposed by chartered organizations. The decision by either of these boards to withhold the scheduling of a film may be appealed to the Vice-President for Student Affairs. When in response to an appeal, a favorable decision is reached, the same procedures listed in (a) through (c) will be required.

Film Scheduling Procedures and Regulations.

1. A general meeting of film presenters will be announced by the scheduling office prior to final examinations for film presentations to be scheduled during the next semester. At this meeting a lottery for the selection of dates will be held.
2. After the general meeting of film presenters films may be scheduled between the hours of 9:00 A.M. and 4:00 P.M. on weekdays in 109 Page Building.
3. Film presenters may schedule only one film per semester unless other dates are available. In this event an additional film may be scheduled after October 1 for the fall semester and January 31 for the spring semester. Both must be approved by the Director of the Office of Cultural Affairs or designate.
4. No film may be shown that is already scheduled for the academic year until following the originally scheduled showing. If groups decide to show a film that is already scheduled, they may not publicly announce in any way their choice of film presentation until the initial group has shown the film.
5. No public film showing (those announced to the general University community) may take place on the same day and/or time where another film has been scheduled.
6. The Manager of the Bryan University Center has reserved the Film Theater for use on Monday and Wednesday evenings for film presentations. The scheduling procedure starts at the Calendar Office, 109 Page Building. Pick up scheduling application (triplicate form in white, yellow, pink) and complete. Check the University *Calendar* for clear date to avoid conflicts. Select film and set starting times for multiple showings. All films must end by 12:30 A.M. to clear theater for closing before 1:00 A.M. Get signature of Director of Office of Cultural Affairs or designate to confirm date and film choice.
7. All chartered organizations' presenters should then proceed to the Office of Student Activities, located behind the Information Desk in the Bryan University Center. Pick up a review of bookkeeping procedures, get the account code of your organization and signature of the Director of the Office of Student Activities or designate. The Director of the Office of Student Activities or designate will not sign the scheduling application form until the following arrangements have been made: (a) the applicant organization's account has been reviewed to determine the ability of the organization to cover the film rental, film transportation, and both security and technical costs of the film presentation and (b) an IR form is prepared for the Building Manager, Bryan University Center, to cover costs for the employment of a house manager and a projectionist. Information which will be needed at this time includes: (1) rating of film (2) running time of film (3) cost of film and cost of film transportation.
8. Return to the Calendar Office no later than three weeks before the date of film presentation. Leave the original white copy at the Calendar Office, the yellow copy with the Building Manager of the Bryan University Center, and keep the pink copy for the film presentation as official authorization. (Note: scheduling will be forfeited if all procedures are not completed within the three-week deadline.)

NB: For showing films in an area other than the Film Theater for which no admission is charged and no donation is taken, arrangements must be made with the Technical Services Office, 03 Page Building, for

use of projectors and a projectionist. For such showings, take an IR form to this office. All film showings must be cleared with the Office of Cultural Affairs to avoid conflicts.

9. Commons areas in residence halls and other such University facilities may not be used for the showing of "stag" films. In addition, such areas may not be used by individuals or groups for performances by strippers.

SAFETY

No institution can guarantee the safety of all students at all times. It is therefore recommended that students exercise caution at times and places known to be hazardous. It is recommended that students not study in a classroom alone or walk alone in unlighted portions of the campus or between campuses after dark. The Public Safety Office (684-2444) may be called to request escort service.

1. Do not walk, jog, or bike alone outside of well-populated areas.
2. Keep your room and apartment door locked *at all times* whether or not you are present.
3. After the closing hours of women's residence halls, all external doors should be kept locked or closed.
4. Immediately report to the Public Safety Office, 911, or 684-2444, any incident taking place that threatens safety or appears suspicious.

SOLICITATION POLICY

Commercial selling or soliciting in the residence halls is prohibited whether by residents or nonresidents.

The Bryan Center environs may be used for the purpose of sales, distribution, or events involving the use of sound amplification equipment. Any such activity must be sponsored by a recognized campus organization and requires the prior approval of the Office of Student Activities.

STUDENT RECORDS

In accordance with the Family Education Rights and Privacy Act of 1974, Duke University generally permits students to inspect their educational records and protects the information in such records from disclosure to third parties without the students' consent. The University's policy on the release of students' records is on file in the Office of the University Registrar.

Address and telephone information provided to the Office of the Registrar may be released without student consent unless written notification is provided to the office.

TRAFFIC REGULATIONS

Motor vehicles must be registered annually at the beginning of the fall semester or, if a vehicle is acquired later, within five days after bringing it to the campus. All registration takes place in the Traffic Office, 2010 Campus Drive, and at other places and times as announced. Students in the School of Medicine and other Medical Center programs, residents of Hanes House, Hanes Annex, and Trent Hall, will all register through the Medical Center Traffic Office at places as announced. There is an annual parking fee, determined by location and status. Students must present a current semester enrollment card and student identification card.

Upon registration of a motor vehicle, students will receive a copy of the University motor vehicle regulations. Operation of a motor vehicle on the campus is contingent upon compliance with these regulations.

All vehicles parked illegally, including bicycles, motor bikes, motor scooters, and motorcycles parked within the residential hall buildings, may be subject to towing.

VENDING AND ELECTRONIC GAMES (PIN-BALL, FOOS-BALL, ETC.) EQUIPMENT

Only University-owned vending and electric game equipment is permitted in the residence halls. Living groups interested in renting this type of equipment should contact Duke University Vending Services, a service component of the Duke University Stores. Such equipment rented from sources outside the University is prohibited.

VIDEO CASSETTE RECORDERS

Students are advised that Federal copyright law restricts the use of video cassette recorders to private showings and prohibits their public performance.

POLICY ON NONDISCRIMINATION

Duke University does not discriminate on the basis of age, race, color, national and ethnic origin, sex, or handicap, in the administration of educational policies, admission policies, financial aid, employment, or any other University program or activity. Inquiries concerning the University's responsibility may be directed to Dolores L. Burke, University Equal Opportunity Office, telephone: 919-684-6578.

Academic Honesty



Use and Acknowledgement of Sources

THE IMPORTANCE OF ACADEMIC INTEGRITY

Independent learning and the acceptance of individual responsibility are values which are highly regarded among undergraduates at Duke University. It is recognized that personal integrity, and the achievement of genuine scholarship in a community of mutual respect, depend upon the commitments of students as well as faculty to these ideals.

Independent learning sometimes involves one in an investigation of novel data or ideas, and in the formulation of original hypotheses. Yet for most college students, independent learning means the patient search for information, the sifting of criticism which others have published, and the use of this material in the statement and defense of their own conceptions and judgements. From the reading of books, periodicals, and other printed materials, research papers and original compositions are written in partial fulfillment of course requirements. It is therefore of importance that all students understand what is expected of them in using and acknowledging such source materials.

Some entering students may have given little, if any, thought to the issue of academic honesty, for they may have been permitted to copy word for word encyclopedias and other reference works without the use of quotation marks. More perhaps have become accustomed to paraphrasing other peoples' ideas without giving credit to whom credit is due. Some students, who have recognized such common forms of plagiarism and avoided them may have fallen into habits of writing which are nonetheless dishonest. A chief contributing factor is a careless manner of notetaking, in which a student's own comments become hopelessly entangled with the words and phrases copied from sources. When notes of this kind are used as a basis for a report, one usually is either unable to identify clearly the ideas which are not his own, or else, since the sources are not open before him at the time of writing, he can easily suppose that no credit need be given. In this way essentially honest students can and do unwittingly undermine their own academic integrity, and that of the community of scholars to which they belong.

It is sometimes protested that educators are too scrupulous in this matter, that there are so many borderline cases as to make the maintenance of standards impracticable. Are not books written to be used by anyone who chooses to rely on them? Do not researchers publish their ideas for others to share? How is one able to distinguish clearly between privileged information and public or common knowledge? Yet thoughtful consideration will lead one to see why honesty is the *sine qua non* of schol-

arship, the essential binding principle of any sound academic community and why scrupulosity in this matter is necessary.

A scholar's contributions are his ideas and insights; these are his actual achievements. While in college he receives recognition for his ideas and skills in the form of grades and credit toward graduation and, in some cases, scholarship awards. After graduation, he may be offered fellowships for graduate study or job opportunities on the basis of these accomplishments. Such things are posited on the faith that a scholar's work and achievements are his own, and that his record indicates accurately the extent to which he is able to organize in his own way that knowledge which is important to the work he is fitted to do. Unless the evaluation of each student's accomplishment is based on his real abilities, on work actually done and rewards gained, his college record becomes a fraudulent document, and an unfair advantage is gained over other students whose scholarship is honestly represented. Among the many factors essential to the good life of a quality college, commitment to the value of academic integrity is crucial. Students assume individual responsibility in this matter; their failure to do so, for whatever cause, is especially lamentable.

The following is published to provide basic information on the subject. First, there is reproduced a definition of plagiarism which, by furnishing examples, illustrates the improper use of source material. The appendix is a statement written by the chairman of the judicial board of the undergraduate colleges.

A DEFINITION OF PLAGIARISM

The academic counterpart of the bank embezzler and of the manufacturer who mislabels his product is the plagiarist, the student or scholar who leads his reader to believe that what he is reading is the original work of the writer when it is not. If it could be assumed that the distinction between plagiarism and honest use of sources is perfectly clear in everyone's mind, there would be no need for the explanation that follows: merely the warning with which this definition concludes would be enough. But it is apparent that sometimes men of good will draw the suspicion of guilt upon themselves (and, indeed, are guilty) simply because they are not aware of the illegitimacy of certain kinds of "borrowing" and of the procedures for correct identification of materials other than those gained through independent research and reflection.

The spectrum is a wide one. At one end there is a word-for-word copying of another's writing without enclosing the copied passage in quotation marks and identifying it in a footnote, *both* of which are necessary. (This includes, of course, the copying of all or any part of another student's paper.) It hardly seems possible that anyone of college age or more could do that without clear intent to deceive. At the other end there is the almost casual slipping in of a particularly apt term which one has come across in reading and which so admirably expresses one's opinion that one is tempted to make it personal property. Between these poles there are degrees and degrees, but they may be roughly placed in two groups. Close to outright and blatant deceit—but more the result, perhaps, of laziness than of bad intent—is the patching together of random jottings made in the course of reading, generally without careful identification of their sources, then woven into the text, the cement to hold the pieces together. Indicative of more effort and for that reason, somewhat closer to honesty, though still dishonest, is the paraphrase, an abbreviated (and often skillfully prepared) restatement of someone else's analysis or conclusion, without acknowledgment that another person's text has been the basis for the recapitulation.

The examples given below should make clear the dishonest and the proper use of source material. If instances occur which these examples do not seem to cover, conscience will in all likelihood be prepared to supply advice.

THE SOURCE

The importance of the Second Treatise of Government printed in this volume is such that without it we should miss some of the familiar features of our own government. It is safe to assert that the much criticised branch known as the Supreme Court obtained its being as the result of Locke's insistence upon the separation of powers, and that the combination of many powers in the hands of the executive under the New Deal has still to encounter opposition because it is contrary to the principles enunciated therein, the effect of which is not spent, though the relationship may not be consciously traced. Again we see the crystallizing force of Locke's writing. It renders explicit and adapts to the British politics of his day the trend and aim of writers from Languet and Bodin through Hooker and Grotius, to say nothing of the distant ancients, Aristotle and the Stoic school of natural law. It sums up magisterially the arguments used through the ages to attack authority vested in a single individual, but it does so from the particular point of view engendered by the Revolution of 1688 and is in harmony with the British scene and mental climate of the growing bourgeoisie of that age. Montesquieu and Rousseau, the framers of our own Declaration of Independence, and the statesmen (or should we say merchants and speculators?) who drew up the Constitution have re-echoed its claims for human liberty, for the separation of powers, for the sanctity of private property. In the hands of these it has been the quarry of liberal doctrines; and that it has served the Socialist theory of property based on labor is final proof of its breadth of view.

CHARLES L. SHERMAN,
"Introduction" to John Locke,
*Treatise of Civil Government and A
Letter Concerning Toleration.*

1. WORD-FOR-WORD PLAGIARIZING

It is not hard to see the importance of the Second Treatise of Government to our own democracy. Without it we should miss some of the most familiar features of our own government. It is safe to assert that the much criticized branch known as the Supreme Court obtained its being as a result of Locke's insistence upon the separation of powers; and that the combination of many powers in the hands of the executive under the New Deal has still to encounter opposition because it is contrary to the principles enunciated therein, the effect of which is not spent, though the relationship may not be consciously traced. The framers of our own Declaration of Independence and the statesmen who drew up the Constitution have re-echoed its claims for human liberty, for the separation of powers, for the sanctity of private property. All these are marks of the influence of Locke's *Second Treatise* on our own way of life.

In this example, after composing half of a first sentence, the writer copies exactly what is in the original text, leaving out the center section of the paragraph and omitting the names of Montesquieu and Rousseau where he takes up the text again. The last sentence is also the writer's own.

If the writer had enclosed all the copied text in quotations marks and had identified the source in a footnote, he would not have been liable to the charge of plagiarism; a reader might justifiably have felt, however, that the writer's personal contribution to the discussion was not very significant.

2. THE MOSAIC

The crystallizing force of Locke's writing may be seen in the effect his *Second Treatise of Government* had in shaping some of the familiar features of our own government. That much criticized branch known as the Supreme Court and the combination of many powers in the hands of the executive under the New Deal are modern examples. But even the foundations of our state—the Declaration of Independence and the Constitution—have re-echoed its claims for human liberty, for the separation of powers, for the sanctity of private property. True, the influence of others is also marked in our Constitution—from the trend and aim of writers like Languet and Bodin, Hooker and Grotius, to say nothing of Aristotle and the Stoic school of natural law; but the fundamental influence is Locke's *Treatise*, the very quarry of liberal doctrines.

Note how the following phrases have been lifted out of the original text and moved into new patterns:

crystallizing force of Locke's writing
some of the familiar features of our own government
much criticised branch known as the Supreme Court
combination of many powers in the hands of the executive under the New Deal
have re-echoed its claims for human liberty...property
from the trend and aim...Grotius
to say nothing of Aristotle and...natural law
quarry of liberal doctrines

As in the first example, there is really no way of legitimizing such a procedure. To put every stolen phrase within quotation marks would produce an almost unreadable, and quite worthless, text.

3. THE PARAPHRASE

Paraphrase: Many fundamental aspects of our own government are

Original: Many familiar features of our own government are apparent in the *Second Treatise of Government*. One can safely assert that the much criticised...Court obtained its being as to the lockean demand that powers in government be kept separate; equally one can say that the allocation of varied and that the combination of many powers the New Deal has still to encounter opposition because it is contrary to the principles enunciated therein...Once more it is possible to note the way in which Locke's writing clarified the crystallizing force of Locke's writing.
existing opinion.

The foregoing interlinear presentation shows clearly how the writer has simply traveled along with the original text, substituting approximately equivalent terms except where his understanding fails him, as it does with "crystallizing," or where the ambiguity of the original is too great a tax on his ingenuity for him to proceed, as it is with "to encounter opposition...consciously traced" in the original.

Such a procedure as the one shown in this example has its uses; for one thing, it is valuable for the student's own understanding of the passage; and it may be valuable for the reader as well. How, then, may it be properly used? The procedure is simple. The writer might begin the second sentence with: "As Sherman notes in the introduction to his edition of the *Treatise*, one can safely say..." and conclude the paraphrased passage with a footnote giving the additional identification necessary. Or he might indicate directly the exact nature of what he is doing, in this fashion: "To paraphrase Sherman's comment..." and conclude that also with a footnote indicator.

In point of fact, this source does not particularly lend itself to honest paraphrase, with the exception of that one sentence which the paraphraser above copied without change except for abridgment. The purpose of paraphrase should be to simplify or to throw a new and significant light on a text; it requires much skill if it is to be honestly used and should rarely be resorted to by the student except for the purpose, as was suggested above, of his personal enlightenment.

4. THE "APT" TERM

The *Second Treatise of Government* is a veritable quarry of liberal doctrines. In it the crystallizing force of Locke's writing is markedly apparent. The cause of human liberty, the principle of separation of powers, and the inviolability of private property—all three major dogmas of American constitutionalism—owe their presence in our Constitution in large part to the remarkable *Treatise* which first appeared around 1685 and was destined to spark within three years, a revolution in the land of its author's birth, and ninety years later, another revolution against that land.

Here the writer has not been able to resist the appropriation of two striking terms—"quarry of liberal doctrines" and "crystallizing force"; a perfectly proper use of the terms would have required only the addition of a phrase: The *Second Treatise of Government* is, to use Sherman's suggestive expression, a "quarry of liberal doctrines." In it the "crystallizing force"—the term again is Sherman's—of Locke's writing is markedly apparent...

Other phrases in the text above—"the cause of human liberty," "the principle of the separation of powers," "the inviolability of private property"—are clearly drawn

directly from the original source but are so much matters in the public domain, so to speak, that no one could reasonably object to their reuse in this fashion.

Since one of the principal aims of a college education is the development of intellectual honesty, it is obvious that plagiarism is a particularly serious offense, and the punishment for it is commensurately severe. What a penalized student suffers can never really be known by anyone but himself; what the student who plagiarizes and "gets away with it" suffers is less public and probably leaves a mark on him as well as on the institution of which he is a member.

STATEMENT BY THE CHAIRMAN OF THE UNDERGRADUATE JUDICIAL BOARD

Duke University, as a community of scholars, strongly relies upon the standard of academic integrity. Plagiarism and other forms of academic dishonesty represent a corruption of this integrity and, as such, cannot be tolerated within the community.

The Undergraduate Judicial Board actively affirms the requirement that every undergraduate student at Duke read and understand the "Statement on Academic Honesty." This statement provides a definitive explication of what is required, in terms of academic honesty, of each student in the community. It has been the sad experience of the board that many cases of academic dishonesty are the result of ignorance as to what exactly constitutes this dishonesty. We firmly urge that each student refer to the statement whenever there is any question about matters of academic honesty. This small investment in time almost certainly outweighs the possibility of badly damaging one's academic career through ignorance or carelessness.

Ignorance of what constitutes academic dishonesty is no excuse for actions which violate the integrity of the community. The board must view any offense of academic dishonesty with the utmost gravity and will determine sanctions commensurate with the severity of the violation. In a community which builds on the notion of academic integrity, the threat of academic dishonesty represents an intolerable risk.

Appendices



Appendix A

DUKE UNIVERSITY LICENSE TO OCCUPY RESIDENCE HALL SPACE

FULL NAME: _____
(last) (first) (middle) (present living group)

HOME ADDRESS: _____
(social security number)

DUKE UNIVERSITY HEREBY LICENSES THE UNDERSIGNED TO OCCUPY A RESIDENCE HALL SPACE FOR THE ACADEMIC YEAR INDICATED BELOW DURING THE PERIODS WHEN RESIDENCE HALLS ARE OFFICIALLY OPEN FOR OCCUPANCY BY LICENSED STUDENTS. THE OFFICIAL OPENING AND CLOSING DATES OF RESIDENCE HALLS AND RECESS PERIODS DURING THE YEAR WHEN RESIDENCE HALLS ARE NOT OPEN FOR OCCUPANCY ARE PUBLISHED BY THE DEPARTMENT OF HOUSING MANAGEMENT. THIS LICENSE AUTOMATICALLY TERMINATES IF THE STUDENT OFFICIALLY WITHDRAWS, GRADUATES, OR CEASES FOR ANY REASON TO BE A FULL-TIME STUDENT.

I have read the accompanying terms under which I may occupy residence hall space, and I understand that my continued occupancy is conditioned on my compliance with these terms and all applicable University regulations. If I violate these terms and regulations, the University may revoke this license and may refuse to license me for any occupancy period subsequent to the one provided in this license. I further understand that the terms of this agreement and University regulations are subject to reasonable changes and that, provided I have been notified of such changes, the University may revoke this license should I violate any term or regulation in effect during my occupancy under this license.

Nothing in this license shall be interpreted as relief from the duty to comply with federal, state, and local law, and violation of any applicable law may be reason for revocation of this license.

In consideration of this license, I agree to pay the University according to the schedule of payments for the type of space I occupy as approved by Duke University, a copy of which has been furnished. I understand that, in the event the University revokes this license because I have violated the terms of this agreement or University regulations, I must vacate the room I am occupying immediately and the University shall not refund any portion of the payment made for the semester in progress. In the

event I officially withdraw, graduate, or cease for any reason to be a full-time student, I agree to vacate the space I am occupying within forty-eight (48) hours; I understand that I will be charged for that semester's housing based on the number of days I have occupied that space and will receive a refund for any amount I have paid for housing beyond the time of my departure.

ACADEMIC YEAR 19 _____ -19 _____ FOR DUKE UNIVERSITY

Date _____

Signature of Student _____

SPACE REQUESTED AND RESERVED

Requested by student _____

Room number _____

House _____

Reserved by University _____

Room number _____

House _____

ROOM DESCRIPTION

Type of Room:

- ☐ Single ☐ Double
☐ Single as double* ☐ Double as triple* ☐ with bath

D.U.H.M. #45
Revised 2/6/86

TERMS UNDER WHICH DUKE UNIVERSITY LICENSES OCCUPANCY OF RESIDENCE HALL SPACE

The purpose of these terms is to establish mutual understanding among students who reside in Duke's residence halls and between these students and the University with regard to use of residential facilities. These terms are an integral part of the license and are enforceable covenants and conditions of the license. Any violation of the terms could lead to revocation of this license and/or disciplinary action. Occupants are responsible for the actions of their guests.

These terms apply only during periods when residence halls are officially open for occupancy by licensed students. A student in the residence halls at any other time may be trespassed from the premises.

*Undergraduate students assigned to single rooms converted for double occupancy and double rooms for triple occupancy may be moved to other rooms or to normal single or double rooms to improve student living conditions and to ensure better use of facilities. The student will be financially responsible for the announced rate for a normal single or double room as applicable. Vacancies occurring in single rooms used as doubles or in double rooms used as triples will make that (those) remaining occupant(s) financially responsible for the announced rate for a single or double room as applicable for the remainder of the term of the license.

I. RESERVATION, ASSIGNMENT, AND ROOM CHANGE PROCEDURES

- A. The license will not be effective unless accompanied by a signed board contract for the same academic year.
- B. Reservations for preregistered upperclass students who have paid residential deposits and the fifty (\$50) prepayment of rent will be made in accordance with procedures announced by the Dean for Residential Life. Every effort will be made to assign students in accordance with their preferences; however, the Dean or designee reserves the right to make or change final room assignments if in his/her judgment such reassignments are necessary.
- C. Exchange or transfer of rooms by students may be made only by the following procedure: (1) approval of room change by the Dean for Residential Life or designee (2) official inspection of vacated room by the Department of Housing Management (3) change of keys in appropriate key office. In all of the above, the student(s) seeking the change is (are) responsible for making appointments and arrangements. Any unofficial room change may lead to revocation of this license and will not relieve the student(s) involved of their obligation to pay occupancy, damages, and other costs for their assigned rooms(s).
- D. Vacancies existing in rooms will be filled by the Dean for Residential Life or designee.
- E. Undergraduate students assigned to single rooms converted for double occupancy and double rooms for triple occupancy may be moved to normal single or double rooms to improve student living conditions and to ensure better use of facilities. The student will be financially responsible for the announced rate for a normal single or double room as applicable.
- F. Vacancies occurring in single rooms used as doubles or in double rooms used as triples will make that (those) remaining occupant(s) financially responsible for the announced rate for a single or double room as applicable for the remainder of the term of the license.

II. PROCEDURES, MAINTENANCE, STORAGE, AND DAMAGES

- A. Maintenance will be performed normally on a routine basis; however, corrective, emergency, and preventive maintenance will be accomplished as necessary.
- B. The University retains the right to enter the premises without the resident being present for routine maintenance, to conduct inspections regarding availability of space, and in case of emergency or failure of equipment which is causing damage or hazard to property or persons. Entry into the room for other reasons will be made during reasonable hours with notice to the assigned occupants.
- C. The Department of Housing Management cleans each room prior to occupancy. Thereafter it is the responsibility of the resident(s) to clean the room. The room is expected to be left in a clean condition by the vacating resident(s). If a room requires excessive cleaning after occupancy, the cost will be charged to the resident(s). Housekeeping services will be provided on weekdays during the academic year (excluding holidays) in common areas only of the residence halls. The cost of extraordinary cleaning resulting from a living group's activities will be charged to the living group.
- D. The University is not liable for damage to or loss of personal property. Since the University does not provide insurance, occupants are encouraged to provide their own personal property insurance.
- E. The University is not liable for the failure or interruption of utilities (including air-conditioning in those residential facilities in which air conditioning units

have been installed) or for damages resulting from failure or interruption of the same. Residents are not entitled to any compensation or abatement of rent.

- F. Use of nails, screws, tacks, or adhesives which damage walls, furniture, or fixtures is prohibited. Advice on nondamaging ways of hanging artwork and other items is available from Housing Management.
- G. Buildings, building equipment, and furniture repairs or replacements necessitated by damage beyond normal wear and tear will be billed to the appropriate student(s) or living group in accordance with official procedures published by Housing Management. At the end of each academic year, outstanding living group charges will be divided equally among the group's members and charged to their student ledgers.
- H. The assigned occupant(s) is (are) responsible for reporting to Housing Management defects or damages found in a room within five working days after occupancy. (Forms are provided for the initial inspection by the Department of Housing Management.) The resident(s) of a room will be charged for any damages or modifications found in the room after occupancy unless previously noted on the inspection form.
- I. Each bedroom is equipped with furniture by the Department of Housing Management. The resident(s) of a room will be charged for any furniture missing from that room. Additional furniture may be added to the room by a resident provided all residents of that room consent.
- J. Students are collectively responsible for care of public area furnishings and equipment. University owned commons furniture may not be removed from its intended location. Commons furniture found in bedrooms may be removed by University personnel at the expense of the occupant(s).
- K. Each resident is required to obtain a room key at the time of his/her occupancy. A deposit for this key will be charged at the rate published by the Department of Housing Management, which deposit is refundable only if the key is returned to the appropriate service office within forty-eight (48) hours of vacating the assigned space.
- L. Resident students may place empty trunks, luggage, and packing cartons (e.g., stereo boxes) in storage rooms during the effective period of this license at no charge. The University takes no responsibility for the items stored or their contents. Procedures for storage on a fee basis are available from the Department of Housing Management.
- M. Non-University property left in rooms after the license period terminates will be disposed of at the discretion of Housing Management.

III. TERMS AFFECTING RIGHTS, ORDER, HEALTH, AND SAFETY

The following terms are designed to protect the health and safety and to provide for the comfort and privacy of all students who are licensed to occupy residence hall space. In addition to the following specific terms, any conduct which reflects a serious disregard for the rights, health, security, and safety of other occupants of the residence halls will be regarded as a violation of the license.

- A. Students are entitled to privacy in their assigned rooms as set forth in the University Privacy Policy published in the *Bulletin of Information and Regulations*. Sanitary or safety inspections may be conducted by government officials without notice in accordance with the general statutes of North Carolina and city and county ordinances. When the residence halls are officially closed during Christmas recess, inspections of rooms will be made by University officials to ensure that no fire or health hazards exist. Hazardous items will

be removed and the student(s) involved will be notified when the buildings are officially opened.

- B. Every occupant of residence halls equipped with a security system will receive a card key or entrance door key. A deposit for this card key will be charged at the rate published by the Department of Housing Management, which deposit is refundable only if the card key is returned to the appropriate service office within 48 hours after vacating the assigned space. Propping open outside residence hall doors or in any way tampering with the security system of the residence hall is also prohibited.
- C. The unofficial use or possession of residence hall keys, including possession of master keys or keys other than those assigned to the student, is prohibited. Keys and card keys are not transferable; switching keys with other students is prohibited.
- D. Lost/stolen keys must be reported immediately to the appropriate service office and a replacement key must be obtained with payment of an additional deposit. The deposit on the lost/stolen key will be forfeited and the bedroom door lock will be changed if the resident is unable to present the lost/stolen key to the service office within two weeks.
- E. Except in case of fire, fire fighting equipment and alarms shall not be tampered with and shall remain in place. Residents must comply with all fire drills and fire regulations.
- F. Personally owned air-conditioning equipment is not permitted in residence hall areas. Compliance with any existing University energy conservation policy is required.
- G. Tampering with electrical wiring, including but not limited to, the installation of direct wired ceiling fans and dimmer switches is prohibited.
- H. Locks and plumbing are not to be tampered with or changed by occupants.
- I. Damage caused by electrical appliances which are not owned by Duke University is the responsibility of the resident(s).
- J. Waterbeds are prohibited.
- K. In accordance with North Carolina General Statute 14-269.2, no firearms, explosives, fireworks, highly inflammable materials, or any articles which may be used as offensive weapons may be in the residence halls or on the campus. This includes knives, slingshots, clubs, pellet guns, rifles, BB guns, and all firearms and items of like kind.
- L. Animals, including, but not limited to, birds and reptiles, are not allowed in the residence halls even for short periods. Fish are allowed provided they are kept in an aquarium no larger than twenty-five gallons, the container is cleaned regularly, and no illegal species are kept.
- M. No personal effects may be left in the hallways, stairwells, or common areas of the residence halls; any personal effects so found will be disposed of at the discretion of the Department of Housing Management.
- N. Selling or soliciting in the residence halls, by residents or outsiders, that is either commercial or unrelated to University objectives or activities is prohibited.
- O. A room may be occupied only by the student holding a license for that room. This license may not be transferred by the student to another person. Guests are permitted in student's rooms and common areas for reasonable periods of time subject to the specified residence hall visitation policies for each residential unit.
- P. Motor vehicles may not be stored or maintained at any time in any residence hall area not designated for that purpose. Bicycles may be retained by the owner in his or her assigned bedroom space, but may not be stored in commons, baths, corridors, entrances, or other residence hall spaces. Motor ve-

hicles and bicycles in unauthorized areas will be removed. Students will be required to pay removal fees in order to recover such vehicles. The University assumes no responsibility for damage to such vehicles or their safety devices.

- Q. Access to roofs and attic space is forbidden.
- R. Candles or other open flame devices in the residence halls are prohibited unless permission is obtained from Duke University Safety Office upon application in writing and upon presentation of proper justification.
- S. Platforms, partitions, or similar structures (e.g., lofts), must not be erected anywhere in the residence halls by students or living groups without the written approval of the Director of Housing Management or designee.
- T. Cable television on the Duke Network is provided in the commons room of each living group. Connecting televisions in bedrooms to the commons room cable is prohibited.

IV. PAYMENTS, RETENTION OF PAYMENTS, AND TERMINATION OF LICENCE

- A. Students pay for their license on a semester basis. Payments are to be made to the Office of the Bursar in accordance with established terms of that office.
- B. A prepayment of fifty (\$50) dollars must be paid by the deadline date published by the Residential Life Office in the spring by every resident student desiring to reserve a space in University housing for the following academic year. This fee will be applied to rent for the fall semester. The rent prepayment is not refunded to students who cancel their housing reservation after the last day of spring semester classes, unless the student is involuntarily withdrawn from the University.
- C. A one hundred dollar (\$100) residential deposit must be paid by each freshman upon admission to the University. While living in University housing, it is understood and agreed that the residential deposit shall not be applied to fees. Upon permanently vacating University housing, Duke shall, within ninety (90) days, refund said deposit, less any outstanding fees incurred in accordance with the established University policy. Charges for damages in excess of the residential deposit shall be assessed to the student. The residential deposit will not be refunded, after residential space is reserved, to new students who fail to matriculate. Currently enrolled students will receive a refund of the residential deposit if written cancellation is received by Residential Life by July 1 for the fall semester and by December 1 for the spring semester.
- D. For upperclass students, the academic year license to occupy entitles a student to occupy his/her residence hall space from noon of the second day before freshman orientation begins to noon of the day after commencement. Licenses for all freshmen begin on noon of the first day of orientation and terminate twenty-four (24) hours after the last scheduled spring examination. Students who have not moved out by the deadline will be moved out by Housing Management.
- E. Undergraduate students who have been assigned a room who wish to cancel their assignment must notify the Office of Residential Life in writing. Students who cancel their assignments after the contract has begun will be entitled to a refund of the unused rent, the amount to be determined by the date of written notification to the Office of Residential Life or the date of vacating the residence halls, whichever is later. In any case a minimum of \$50 will be retained by the Department of Housing Management.

Prior to the implementation of proposed amendments to the terms set forth above, such proposed amendments shall be submitted to the Residential Policy Committee and ASDU for their consideration and comment.

D.U.H.M. Form #46
Revised 2/6/86

DUKE UNIVERSITY LICENSE TO OCCUPY SPACE IN CENTRAL CAMPUS FACILITIES

NAME: _____

HOME ADDRESS: _____
Street # or P.O. Box

ASSIGNED LOCATION: _____
City State Zip

PERIOD: from noon _____ to noon _____

Duke University hereby licenses the undersigned to occupy space in the above named location for the period indicated above subject to the rules, regulations, and other terms of this licensing agreement and all applicable University regulations. Due to the economics of operating these units, this license will not be revoked to permit students to move to other University housing facilities or to move off campus.

I have read the rules, regulations, and other terms of this agreement, a copy of which has been furnished, under which I may occupy space in University housing and I understand that my continued occupancy is conditioned on my compliance with these terms and all applicable University regulations. (Attention is especially directed to Part III of the rules, regulations, and other terms.) If I violate any of these rules, regulations, and other terms, the University may revoke this license and may refuse to license me for any occupancy period subsequent to the one provided in this license. I further understand that the rules, regulations, and other terms of this agreement and University regulations are subject to reasonable changes and that, provided I have been notified of such changes, the University may revoke this license should I violate any rules, regulations, or other terms in effect during my occupancy under this license.

Nothing in this license shall be interpreted as relief from the duty to comply with federal, state, and local law, and violation of any applicable law may be reason for revocation of this license.

In consideration of this license, I agree to pay the University according to the schedule of payments for the type of space I occupy as approved by Duke University, a copy of which has been furnished. I understand that, in the event the University revokes this license because I have violated any of the rules, regulations, or other terms of this agreement or University regulations, I must vacate the space I am occupying immediately and the University shall not refund any portion of the payment made for the semester in progress. In the event I officially withdraw, graduate, or cease for any reason to be a full-time student, I agree to vacate the space I am occupying within forty-eight (48) hours; I understand that I will be charged for that semester's housing based on the number of days I have occupied that space and will receive a refund for any amount I have paid for housing beyond the time of my departure.

(for Duke University) (Signature of Student)

Date Date

RULES, REGULATIONS, AND OTHER TERMS FORMING A PART OF THE LICENSE OF CENTRAL CAMPUS APARTMENTS, TOWN HOUSE APARTMENTS, AND MODULAR HOMES

One purpose of these terms is to establish a mutual understanding among students and the University with regard to use of facilities in Central Campus Apartments, Town House Apartments, and Modular Homes. These rules, regulations, and other terms are an integral part of this license and are enforceable as covenants and conditions of the license. For further information please refer to the Central Campus Handbook.

I. ELIGIBILITY

Units in the facilities are available for assignment to any full-time Duke University student who is working toward a degree. Students who withdraw from school or take a leave of absence must vacate the apartment within forty-eight (48) hours from date of such withdrawal or leave.

II. PAYMENTS:

- A. **Prepayment:** A fifty (\$50) prepayment fee must be paid by eligible students who wish to participate in sign-up for a subsequent academic year. This prepayment will be credited to the fees for the fall semester. The rent prepayment is not refunded to students who cancel their housing reservation after the last day of spring semester classes unless the student is involuntarily withdrawn from the University and notifies the Department of Housing Management in writing of the cancellation within ten days of the withdrawal date.
- B. **Residential Deposits.** Unless previously paid, a student who wishes to reserve a unit in Central Campus Apartments, Town House Apartments or Modular Homes must submit a residential deposit of one hundred dollars (\$100) together with an application to the Manager, Housing Administration. While living in University housing, it is understood and agreed that the residential deposit, shall not be applied to housing fees. Upon termination of this license and vacating University housing, Duke shall, within ninety (90) days, refund said deposit, less any outstanding fees incurred in accordance with the established University policy. Charges for damages in excess of the residential deposit shall be assessed to the student. The residential deposit will not be refunded after an assignment has been made to students who cancel their assignments, forfeit their assignments, or fail to occupy the residential space except in the following instances. A student who has paid a prepayment for a subsequent academic year will receive a refund of the residential deposit if written cancellation is received and approved by Housing Management by July 1. A student residing in University housing for the fall semester will receive a refund for the spring semester is received and approved by Housing Management by December 1.
- C. **Key Deposit.** Each resident of a housing unit will receive one key to the unit and one mailbox key at the time of his/her occupancy. A deposit for each of these keys will be charged at the rate published by the Department of Housing Management, which deposit is refundable only if the key(s) is(are) returned within forty-eight (48) hours of the termination of this license.
- D. **Housing Fees.** Payments for housing are to be made to the Office of the Bursar before occupancy in accordance with established terms of that office. Payments are to be made on a semester basis.

III. RESERVATION, ASSIGNMENT, SPACE CHANGE, AND CANCELLATION PROCEDURES

- A. Applicants for spaces in Central Campus Apartments, Town Houses, and Modular Homes will be assigned in order of dates of receipt of applications and the required deposit. Graduate students and undergraduate students who are presently enrolled will be assigned in accordance with procedures published by the Department of Housing Management.
- B. The number of students to be assigned to various types of units is established by the Department of Housing Management.
- C. Every effort will be made to assign the student in accordance with his or her preference. Because this is not always possible, the Manager, Housing Administration, or designee, retains the authority to make final space assignments.
- D. The exchange or transfer of apartments may be made only upon approval of the Manager, Housing Administration. It is the responsibility of a student vacating space or exchanging apartments to make the apartment ready for the new tenant. The space to be vacated will be inspected by a representative of Housing Management to relieve the vacating student of financial responsibility for damage occurring after the student vacates. Any unofficial apartment change may be reason for revocation of this license and will not relieve the student(s) involved of the obligations to pay occupancy, damage, and other cost for the assigned space.
- E. The Department of Housing Management makes no effort to assign individual bedroom space within each unit. That responsibility is left to the assigned occupants.
- F. Units shall not be occupied in whole or in part by any person other than those regularly assigned by the Manager, Housing Administration, nor may occupants sublet assigned space. Any attempted agreement to sublease without the Manager, Housing Administration or designee's consent, shall be void. Guests are permitted for short periods only provided all residents of that unit are in consent.
- G. The Manager, Housing Administration or designee, reserves the right to change space assignments if in his/her judgment such change(s) are necessary.

IV. PROCEDURES, MAINTENANCE, STORAGE, AND DAMAGE

- A. Maintenance to buildings, fixtures, utilities, equipment, furniture, and furnishings will be performed on a routine basis; however, corrective emergency and preventive work will be performed as necessary.
- B. Prior to occupancy, the Department of Housing Management will clean each vacant unit and will correct deficiencies. An inspection form will be made available for each apartment. Each assigned student should note on the form the condition of the apartment and furnishings at the time of occupancy to prevent misunderstandings. Instructions on the form must be followed.
- C. Occupants shall maintain the demised premises, the furnishings and equipment therein in good condition and shall be responsible for all broken windows and door glass and other damage beyond normal wear and tear, including failure of plumbing or equipment caused by misuse. In such cases, occupants shall be assessed the cost of materials and labor as invoiced by the Department of Housing Management for repairs, replacements, or reassembly. The Department of Housing Management shall have routine maintenance performed and agrees to make such repairs as may be rendered necessary insofar as the cause thereof does not arise from the willful acts or negligence

of the occupant(s). No alteration, addition, or painting may be conducted within the premises by the occupant(s).

- D. Locks and plumbing are not to be tampered with or changed by residents.
- E. The University retains the right to enter the premises without the tenant being present for the following reasons: (1) emergency or failure of equipment which is causing damage or hazard to property or persons, (2) to conduct inspections to determine availability of space, (3) for routine maintenance, (4) during the break between the fall and spring semesters to ensure that the furnace has been left on and that the thermostats have not been set below 50 degrees. Furnaces that have been turned off will be turned on and the thermostats will be set at 50 degrees by the Department of Housing Management. Entry into the apartment for other reasons will be made during reasonable hours with notice to the assigned occupant(s).
- F. Non-University property left in apartments after the license period terminates will be disposed of at the discretion of Housing Management.
- G. The unofficial use or possession of apartment keys, including possession of master keys or keys other than those assigned to the student, is prohibited.
- H. Lost/stolen keys must be reported immediately to the Central Campus Service Office and a replacement key must be obtained with payment of an additional deposit. The deposit on the lost/stolen key will be forfeited and the lock(s) to the apartment will be changed if the resident is unable to present the lost/stolen key to the Central Campus Service Office within two weeks.
- I. The University is not liable for damage or loss of personal property. Since the University does not provide insurance, occupants are encouraged to provide their own personal property insurance.
- J. The University is not liable for damage, failure, or interruption of utilities. Interruption or curtailment of such services will not entitle the resident to any compensation.
- K. University-owned furniture or equipment placed in the unit may not be removed from the unit.
- L. Pianos, washing machines, dryers, dishwashers, radio transmitters, and waterbeds are not authorized in these units. Antennae may not be installed in any unit. Cable television on the Duke network is provided in the Central Campus Apartments.
- M. Use of screws, hooks, decals, tacks, and adhesive on walls, furniture, or fixtures is prohibited. Small picture hanging nails provided by the Apartment Operations Office may be used; however, heavy items may not be hung.
- N. Washing of cars in the Central Campus area is prohibited.
- O. No dusting or shaking of mops, brooms, or other cleaning material from the windows, doors, and balconies is permitted.
- P. No fences may be put up around the apartments.
- Q. Outside clotheslines are prohibited.
- R. Access to roofs and attic space is prohibited.

V. TERMS AFFECTING RIGHTS, ORDER, HEALTH, AND SAFETY

The following terms are designed to protect the health and safety and to provide for the comfort and privacy of all students who are contracted to occupy units in Central Campus Apartments, Town House Apartments, or Modular Homes. In addition to the rules, regulations, and other terms, any conduct which reflects a serious disregard for the rights, health, security, and safety of other residents will be regarded as a violation of the license.

- A. Combustible materials shall not be stored on the premises.

- B. Sidewalks, stairways, and entryways must not be used for purposes other than ingress or egress. Bicycles must not be left in these areas or other locations where they may cause harm to persons or groundskeeping equipment. Motorcycles must be parked in parking lots.
- C. Nothing shall be hung from balconies, porches, gutters, or stairwells.
- D. In accordance with North Carolina General Statute 14-269.2, no firearms, explosives, highly flammable materials, or any articles which may be used as offensive weapons may be in the Central Campus facilities. This includes slingshots, clubs, pellet guns, rifles, BB guns, and all firearms and items of like kind.
- E. Tampering with electrical wiring, including but not limited to the installation of direct-wired ceiling fans and dimmer switches is prohibited.
- F. Delivery trucks, automobiles, motorcycles, scooters, and minibikes will not be permitted on lawns and walkways, patios, or stairwells. These vehicles must be parked in legal parking spaces.
- G. Animals, including but not limited to birds or reptiles shall not be taken into or kept in or about the units. An extermination charge will be issued if an animal, bird, or reptile enters the apartment. Fish are allowed provided they are kept in an aquarium no larger than twenty-five gallons; the container is cleaned regularly; and no illegal species are kept.
- H. Residents shall maintain the areas adjacent to their apartments in a neat and orderly condition. No refuse, loose paper, cans, bottles, etc. shall be permitted to accumulate around the dwelling units. Any packing cases, barrels, or boxes used in moving must be removed by the occupants who are moving. Bulk refuse containers are located throughout the complex.
- I. Campers, trailers, boats, or similar units may not be parked in the parking lots or other areas at the Central Campus Apartments, Town House Apartments, or Modular Homes sites.
- J. Burning candles or other flames are prohibited in University housing.
- K. Any infectious or contagious diseases occurring within the apartment should immediately be reported to the Department of Housing Management.
- L. Selling or soliciting on the premises of University housing by residents or outsiders, that is either commercial or unrelated to University objectives or activities is prohibited.
- M. The apartment must be kept in good order and in a sanitary condition.
- N. Laundry rooms will not be used for storage of personal effects, bicycles or the like. The University is not responsible for lost or stolen clothing from laundries.
- O. The Town House pool may be used only by Town House residents and their guests. All users must observe swimming pool regulations published by Housing Management. Any user uses the pool at his/her own risk.
- P. Boisterous conduct in violation of the University noise policy is prohibited. Occupants are responsible for the conduct of their guests, and for any violation of these rules and regulations by a guests shall constitute a violation of same by occupants.
- Q. Fire extinguishers are placed in each apartment for the safety of occupants and as a safeguard of the property. Tampering with this equipment or use for any purpose other than extinguishing fires is prohibited.

VI. ENERGY CONSERVATION

All residents must comply with energy conservation programs as established by Duke University for residential facilities.

D.U.H.M. Form #44
Revised 2/6/86

Appendix B

1986/87 DUKE UNIVERSITY RESIDENTIAL FOOD SERVICES CONTRACT

1. Duke University policy requires that all undergraduate students residing on campus participate in the Dining Plan offered by Duke University Food Services. The only exception to this policy is that Central Campus residents are excluded from this requirement.
2. For Purposes of this Contract, hereafter the contract participant shall be referred to as the contractor.
3. The contractor may select one of the Dining Plan options listed below (plans A-E). The contract shall be for one full academic year. The contract dollars purchased by the contractor shall be allocated on a semester to semester basis, with one half of this contract billed to your Bursar account prior to the beginning of each semester.
4. Dining contract dollars that are unused at the end of the first semester shall be carried forward to the second semester, but in no case shall second semester contract dollars be drawn against prior to the beginning of the second semester.
5. This contract shall be in effect for the period commencing the first day of Freshman Orientation in the Fall Semester and ending after dinner on the Monday, following graduation in the Spring Semester. Contract dollars remaining in the contractor's Dining Plan account at the end of the academic year shall be refunded based upon the schedule listed in 12-C and 12-D below.
6. The contractor may change the Dining Plan commitment to a different level of the second semester only during the period of Monday, September 29, 1986 through Friday, November 14, 1986. There will be a ten dollar (\$10) charge for any Dining Plan change.
7. Duke University's ID card shall be the medium by which you will access your Dining Plan contract dollars. This card must be presented to the cashier at the time of purchase, and shall be the only way of accessing your Dining Plan account.
8. The Dining Plan account is nontransferable, either in part or in whole. However, contractors may pay for a guest's transaction by way of their Dining Plan.
9. Duke University Food Services reserves the right to determine the hours and days of operation for all facilities, the menu and price of same, and all other operational requirements relative to this contract.
10. The Dining contract requires a ten dollar (\$10) nonrefundable yearly fee plus one of the plans listed below:

PLAN	COST OF PLAN (excluding card fee) +	LESS CARD FEE \$	PURCHASING POWER
A.	\$1,010	\$10	\$1,000
B.	1,560	10	1,550
C.	1,760	10	1,750
D.	1,910	10	1,900
E.	2,110	10	2,100

11. Additional dollars may be added to any Dining Plan listed above in increments of \$50. All additional dollars purchased shall be at full value, with \$50 invested equalling \$50 worth of buying power.

12. REFUND POLICY

A. Official Leave of Absence or Withdrawal during the semester as certified by the Registrar or appropriate Dean.

WITHDRAWAL OR LEAVE DATE		PERCENTAGE OF CONTRACT TO BE REFUNDED LESS BONUS REFUNDED
FALL SEMESTER	SPRING SEMESTER	
Before Aug. 25, 1986	Before Jan. 7, 1987	100%
Aug. 25-Sept. 28, 1986	Jan. 7-Feb. 10, 1987	50%
After Sept. 28, 1986	After Feb. 10, 1987	0%

B. Student moving off-campus (including to Central Campus) shall be refunded at the full value of the remaining dollars in their account, *less* any bonus.

C. Balance remaining at the end of the semester for a one semester contractor:

The first \$50. remaining 100% credited to your Bursar's account

All dollars above the first \$50. 50% credit to your Bursar's account

D. Balance remaining at the end of the Academic year, for full academic year contractor:

The first \$100. remaining 100% credited to your Bursar's account

All dollars above the first \$100. 50% credit to your Bursar's account

13. Any food removed from the "All You Can Eat" dining areas must be purchased at the a la carte price.

14. Any misuse of this contract, in part or in whole, by the contractor shall be subject to the provisions of the Duke University Judicial Code.

Please indicate your choice of Dining Contract Plan by circling the appropriate letter:

A B C D E

Please Print or Type the following information:

FULL NAME _____ D.U. ID # _____

LOCAL ADDRESS _____ LOCAL PHONE _____

Please circle the appropriate descriptors below:

ON CAMPUS OFF CAMPUS FRESHMAN SOPHOMORE JUNIOR

SENIOR GRAD OTHER _____

EXPLAIN

I have read the above contract and accept the terms and conditions as set forth herein.

SIGNATURE _____ DATE _____

Please retain the last copy of this contract for your records.

Appendix C

JUDICIAL SYSTEM OF DUKE UNIVERSITY

Article I: The Judicial System

1.010 The judicial system of the University shall consist of the University Judicial Board, a Judicial Board for each of the communities hereafter defined (see Article III), and a Judicial Board for each of the residential units in the University.

Article II: The University Judicial Board

2.010 Jurisdiction

- a. The jurisdiction of the University Judicial Board shall be limited to cases arising out of the Pickets and Protests Regulations and cases involving more than one of the communities as determined by the Vice-President for Student Affairs in consultation with the Chancellor and the Chairman of the University Judicial Board.
- b. The University Judicial Board shall have jurisdiction over members of the student body, members of the faculty, and administrative personnel of the University not subject to the *Personnel Policy Handbook*.

2.015 Filing of Charges; Responsibilities of Vice-President for Student Affairs

- a. The Office of the Vice-President for Student Affairs shall have responsibility for receiving complaints, conducting investigations, and preferring charges concerning offenses within the jurisdiction of the board. The University Judicial Board shall hear no case without a finding of probable cause made by the Vice-President for Student Affairs, whose signature to the charge or charges shall constitute sufficient evidence of such finding.
- b. To assist the Vice-President for Student Affairs in the investigation of complaints, the gathering of evidence, and the preparation of charges, investigative and judicial aides may be appointed by the Vice-President and shall serve at his/her pleasure and under his/her direction. The number and specific duties of such aides shall be determined by the Vice-President for Student Affairs, who shall be fully responsible for all duties performed by them in their capacity as aides.
- c. The Vice-President for Student Affairs shall subpoena witnesses as directed by the University Judicial Board.
- d. The Vice-President for Student Affairs may delegate all or any portion of his/her duties as regards these judicial procedures to an aide or aides whose appointment is approved by the Vice-Provost and Dean of Undergraduate Instruction. The Vice-President for Student Affairs shall be responsible for the discharge of all duties thus delegated.

2.020 Membership

The University Judicial Board shall consist of a Chairman appointed by the Chancellor, five faculty members (two of whom shall be from the Law School) appointed by the Executive Committee of the Academic Council, and two student members from each of the communities (except in the case of the undergraduate community where there should be four members) elected by each community's Judicial Board. The Chairman of the Board shall select five-person panels consisting of a Chairman and an equal number of students and faculty. Cases referred to the board shall be assigned to the

panels in rotation, provided that a member of a panel may, at his/her request, be excused from sitting on a case by the Chairman of the Board, who may appoint a substitute from among the other members of the board. Each panel shall be known as a "Hearing Committee of the University Judicial Board."

2.030 Terms of Members

Faculty members shall normally serve for two-year terms, but are eligible for reappointment. The terms should be staggered in order to provide continuity. Two of the initial appointees shall be appointed for one-year terms. Student members shall serve for one-year terms, although they may be eligible for re-election. The board has the right to remove any member of the board for cause by a vote of a two-thirds majority of all members. The vacancy shall be filled promptly according to the original procedure.

2.040 Conduct of the Hearing

- a. The hearing will be conducted in private unless the accused requests an open hearing. If any objection is raised to conducting an open hearing in any particular case, the Hearing Committee of the University Judicial Board will decide the issue by majority vote. If the decision is made not to hold an open hearing, the accused shall be informed in writing of the reasons for the decision.
- b. The University and the accused may be represented by an adviser of his/her choice.
- c. The board shall promulgate its own rules of procedure consistent with academic due process and all provisions of this document.
- d. The accused has the right to challenge on the grounds of prejudice any member of the Hearing Committee sitting on his/her case. If an accused makes such a challenge, the Hearing Committee shall deliberate in private to determine whether cause exists. By a majority vote of the members of the tribunal (excluding the member being challenged), a member shall be removed from the case and replaced by a member of the board designated by the Chairman of the Judicial Board. In addition, the accused may exercise a challenge directed at the entire panel, in which case the challenge shall be made to the Chairman of the University Judicial Board, who shall excuse the panel challenged and refer the accused's case to the next panel in rotation.

2.05 The Right of Appeal

- a. In cases heard by the University Judicial Board, there will be no appeal when the accused is acquitted.
- b. A student or administrator who is not a member of the faculty convicted by the University Judicial Board may appeal to the President, or in his/her absence, the Provost, in which case such appeal shall be solely on the record of the proceedings before the Hearing Committee. Argument or appeal shall be on written submission, but the President may, in addition, require oral argument.
- c. A member of the faculty convicted by the University Judicial Board may appeal to the Faculty Hearing Committee authorized under the provisions for Academic Freedom and Tenure of Duke University.

2.060 Status of the Accused

Charges must be prepared without delay following the alleged commission of the offense. Pending final verdict on charges against the accused (including appeal), his/

her status shall not be changed, nor his/her right to be on campus to attend classes suspended, except that the Chancellor or Provost may impose an interim suspension upon any member of the University community who demonstrates, by his/her conduct, that his/her continued presence on the campus constitutes an immediate threat to the physical well-being or property of the members of the University community or the orderly functioning of the University. The imposition of interim suspension requires that the suspended individual shall immediately observe any restriction placed upon him/her by the terms of the suspension. The suspended individual shall be entitled to a hearing within three (3) days before the Hearing Committee on the formal charges. If he/she requires additional time to prepare his/her case before the Hearing Committee, he/she shall be entitled to an informal review of the decision imposing interim suspension by a three-person committee chosen from the members of the University Judicial Board by its Chairman. Interim suspension is an extraordinary remedy which will be invoked only in extreme cases where the interest of the University and members of its community require immediate action before the Hearing Committee can adjudicate formal charges against the suspended individual. If interim suspension is imposed and the accused is later found innocent, the University shall seek restitution as provided by the Hearing Committee with respect to the student's academic responsibilities incurred during the period of suspension.

2.070 Civil and Criminal Courts

Members of the University community may be subject to civil or criminal proceedings in a local court. The Chancellor may initiate legal action seeking injunctive or other civil relief, or file criminal charges when it is necessary to protect the person or property of members of the University community, or the orderly functioning or property of the University. Such action may be in addition to the filing of formal charges before the University Judicial Board and/or interim suspension.

2.080 Sanctions

- a. A Hearing Committee of the University Judicial Board shall have the power to impose the following penalties upon students:
 1. Expulsion. Dismissal from the University with the recommendation that the person never be readmitted.
 2. Suspension. Dismissal from the University and from participation in all University activities for a specified period of time after which the subject may apply for readmission.
 3. Suspended Suspension. Penalty (2), suspended because of unusual mitigating circumstances. In a period of time specified, conviction before the University Judicial Board, or before one of the community Judicial Boards may result in suspension.
 4. Disciplinary Probation. Placing a student on a probationary status for a specified period of time, during which conviction of any regulation may result in more serious disciplinary action.
 5. Exclusion from participation in extracurricular activities. Without limiting the generality of that penalty, such restrictions might involve participation in any collegiate athletics, or any public participation or performance in the name of the University. However, a Hearing Committee may not exclude a person from performance of the duties of an elective office, but may make such a recommendation to the appropriate organization. This penalty may be imposed by itself or in addition to any of the other enumerated penalties.

6. Censure. Written reprimand for violation of the specified regulation, including the possibility of more severe disciplinary sanction in the event of conviction for the violation of the same or one of equal seriousness within the period of time stated by the reprimand.
 7. Admonition. By an oral statement to the offender that he/she has violated the University rules or has been in contempt of the board.
 8. Restitution. Payment for all, or a portion of property damage caused during the commission of an offense. This penalty may be imposed by itself, or in addition to any of the other penalties.
 9. Fines. Payment of reasonable sums to be determined by a Hearing Committee. This penalty may be imposed by itself, or in addition to any of the other penalties.
 10. Exclusion from social activities where the nature of the violation so indicates including, but not limited to, curfews or other revocation of upperclass privileges.
- b. A Hearing Committee of the University Judicial Board shall have the power to impose the following penalties upon faculty members and administrative personnel not subject to the provisions of the *Personnel Policy Handbook*.
1. Dismissal. Dismissal or termination of appointment.
 2. Censure.
 3. Admonition.
 4. Restitution.
 5. Fines.

2.085 Other Powers

The Hearing Committee may recommend to the University that it seek restitution with respect to the accused's University responsibilities incurred during a period of suspension or during the period when a hearing has been conducted or shall make such other nonpunitive recommendations with respect to the accused as it shall deem appropriate.

2.090 Records

The board shall promptly arrange a policy of keeping its own records, subject to the University policy on confidentiality.

2.095 Excusal of Members of the University Community from University Obligations

Any member of the University community whose presence is required at a hearing shall be excused from the performance of any University responsibilities which would normally be performed at the time when his/her presence is required before the Hearing Committee.

2.096 Revocation of Probation or Suspended Suspension

In the event that a student has been placed on suspended suspension or disciplinary probation by the University Judicial Board and subsequently is convicted of a violation of a regulation by any other University tribunal, the suspension of his/her suspension or the revocation of his/her probation will not automatically occur. In such a case the student shall be entitled to a hearing being limited to the issue of whether his/her probation should be revoked or whether he/she should be suspended as the result of the original conviction and the conduct which gave rise to the second conviction.

Article III: Community Judicial Boards

3.010 Community Judicial Boards

There shall be an undergraduate community consisting of the undergraduates in Trinity College of Arts and Sciences and the School of Engineering; a Divinity School community consisting of all students in the School of Divinity; a Law School community consisting of all students in the School of Law; a Medical School community consisting of all students in the School of Medicine; an Allied Health community consisting of all degree and certificate (i.e., paramedical, nondegree) students in the School of Allied Health; a Forestry and Environmental Studies School community consisting of all students in the School of Forestry and Environmental Studies; and a Graduate School community consisting of all students in the Graduate School. Except as hereafter provided for the undergraduate community, each community shall have such judicial system as its governing body may provide.

Article IV: The Undergraduate Community

4.010 The Undergraduate Judicial Board

A (1) *Board Established.*

There is established an Undergraduate Judicial Board, hereinafter denoted as the board.

A (2) *Membership.*

The board shall have twenty-five (25) members. Twelve (12) will be from among the undergraduates, nine (9) will be from among the faculty, and four (4) will be from among the deans in the undergraduate schools and college.

A (3) *Selection of Undergraduate Members.*

Student members of the board will be chosen from among interested rising juniors and seniors as follows:

- a. Interested candidates will apply for positions by completing written forms devised by the board.
- b. The candidates will subsequently take an objective-type written questionnaire on the several aspects of the undergraduate judicial system.
- c. Those obtaining a passing score, as defined by the board, are deemed eligible for interviews.
- d. Interviews will be conducted by senior student members of the board and one representative of the Undergraduate Student Government appointed by the Chief Executive Officer of that government.
- e. From among those interviewed, one nominee shall be recommended for each vacancy together with a total of three (3) alternates.
- f. All those nominated are subject to approval by the legislature of the Undergraduate Student Government as advised by a representative of the board in attendance.
- g. At every stage of this process, consideration shall be given to the appointment of at least one student from each of the undergraduate school and college.
- h. Except that interim members as provided for in A(6) who have served for at least one (1) semester during their junior year will become regular members of the board for the following academic year as a matter of course.

A (4) *Selection of Faculty Members.* Faculty members of the board will be appointed by the duly empowered committee of the Undergraduate Faculty Council of

Arts and Sciences through the Dean of Trinity College and Dean of Arts and Sciences and by the Dean of the School of Engineering. Coordination and the number of appointments from each school or college will be made through the Deans' Council (Deans of the two [2] undergraduate entities).

- A (5) *Selection of the Dean Members.* Dean members will be appointed by the Deans' Council (Deans of the two [2] undergraduate entities). Appointees will be deans in the undergraduate school and college, but will not include either the Dean for Student Life, the Dean for Residential Life or the Vice-President for Student Affairs, including their assistants.
- A (6) *Selection of Interim Members.*
 - a. Interim undergraduate vacancies on the board are to be filled through nomination(s) of one or more of the previously designated alternates by a concurrent vote of two-thirds (2/3) of the full board membership and subsequent approval by the legislature of the student government.
 - b. Interim faculty vacancies are to be filled by the duly empowered committee of the Undergraduate Faculty Council of Arts and Sciences, and interim dean vacancies by the Deans' Council.
 - c. Any undergraduate member of the board who takes a leave of absence while remaining in good standing in the University will resume, upon return, the place previously vacated on the board.
 - d. Interim members will serve only to the end of the regular academic year whereupon the position held will be vacated and filled in the manner prescribed in A(3) through A(5).
 - e. But interim members serving during leaves of absence of regular members will terminate their duties and return to their former status as alternates upon return to service of that regular member.
- A (7) *Removal of Members.* The board may remove any member for cause by a two-thirds (2/3) majority of the full board. The vacancy so created will be filled forthwith in the manner prescribed in A(6).
- B (1) *Terms of Undergraduate Members.* Undergraduate members of the board will ordinarily serve during good behavior for terms not exceeding two years.
- B (2) *Terms of Faculty and Dean Members.* Faculty and dean members will serve two-year terms, subject to reappointment upon consent. To insure staggered terms, they may be appointed for a single year.
- C (1) *Board Organization:* The full board will elect, by majority vote, a Chairman and Vice-Chairman, both of whom must be undergraduates.
- C (2) *Board Calendar.*
 - a. *Regular Terms.* The board or parts thereof will ordinarily hear and dispose of all pending cases in which charges have been preferred, during the regular fall and spring semesters, and following the end of spring semester.
 - b. *Summer Session Terms.*
 - 1. The Chairman will ascertain the local availability of board members for summer session service and those within a 200 mile radius who may be invited by the Dean for Student Life to serve at University expense.
 - 2. The Chairs of the Undergraduate, Residential, and IFC Judicial Boards will provide the Dean for Student Life with a roster of their respective

board members available for service on the Undergraduate Judicial Board during all or any portion of the summer sessions.

3. The Dean for Student Life will constitute a five (5) member Hearing Committee from this list, appoint a chairman and provide an ordinary hearing committee including at least one (1) faculty member and two (2) students.
4. If the number of student members drawn from the rosters provided under C(2)(b.)(2) above is insufficient to constitute the hearing panel provided for in C(2)(b.)(3) above, the Dean for Student Life, with consent of the Chief Executive Officer of the Undergraduate Student Government, will appoint the necessary number of students drawn from the undergraduate student body.
5. The Summer Session Hearing Committee will function in the same manner and with the same procedure as a Regular Term Hearing Committee, except that the accused may not enjoy more than one (1) peremptory challenge.

C (3) *Duties of Officers.*

- a. The Chairman, if present will preside over any meeting of the board or any meeting or hearing of a part thereof.
- b. The Chairman will maintain a roster of available members for the regular and summer session terms (see C[2]).
- c. The Chairman and the Dean for Student Life will prepare a "Semester Report of the Undergraduate Judicial Board" to be issued in January and May. It will be a statistical survey designed to order cases: by volume, classification, disposition, and current status (e.g., filed, pending, heard, on appeal to Dean or to Vice-President).
- d. The Chairman will be responsible for issuance of an "Annual Report of the Undergraduate Judicial Board" to be compiled following adjournment of the board at the end of the spring semester. The contents will contain:
 1. A listing, by types of cases, of abstracts of all completely adjudicated cases.
 2. A statistical survey of the business of the board during the preceeding academic year.
 3. A commentary on that business.
 4. Any recommendations which the board wishes to make.
 5. The "Annual Report" will be released prior to freshman registration in the fall semester and will constitute the basis of an early fall semester interview with the *Chronicle* to be held by the Chairman.

D (1) *Hearing Panel Organization.* Hearing panels will consist of seven (7) members as assigned by the Dean for Student Life in consultation with the Chairman or Vice-Chairman. Each hearing panel will consist of four (4) undergraduates, two (2) faculty members, and one (1) dean. One student member will be designated as Chairman of the panel.

D (2) *Modified Hearing Panel Organization.* In the interest of speedy disposition and with agreement of the accused, a panel of reduced size may be convened, but in no panel shall it consist of fewer than five (5) members appointed by the Dean for Student Life in consultation with the Chairman or Vice-Chair-

man. Each such panel will consist of three (3) undergraduates, one (1) faculty member, and one (1) dean.

D (3) *Substitution of Hearing Panel Members.* Any member of a panel may, at his or her request, be excluded by the Chairman of the Board from sitting on any case. The Chairman of the Board will thereupon appoint a substitute member from among the relevant class of members of the board.

E (1) *Jurisdiction.* The board will exercise original jurisdiction over all cases:

- a. in which the accused is a named student in the undergraduate community defined as persons, including employees, currently enrolled in, not yet formally graduated from, or admitted and not yet matriculated or readmitted, and not yet matriculated to programs of the undergraduate colleges.
- b. which fall without the jurisdiction of the University Judicial Board and the Residential Judicial Board.
- c. which fall within the classification of offenses stipulated in the Judicial Code of the Undergraduate Community (see pp. 38–40) and the University Regulations and Policies (see pp. 42–55) in this bulletin.

F *Functions of Dean for Student Life*

F (1) The Dean for Student Life or designee is responsible for receiving complaints, conducting investigations, gathering evidence, and preparing and preferring charges relating to offenses within the jurisdiction of the board.

F (2) The Dean for Student Life may appoint assistants, in such numbers and for such duties under his/her supervision in order to faithfully execute his/her responsibilities, as the Dean shall deem convenient and useful.

F (3) The Dean for Student Life is responsible for maintenance of the records of the board. These records include:

1. a public permanent precedent file provided by panels. It consists of abstracts specifying charges, facts, case dispositions and rationales for such dispositions. Identification of the party or parties as well as of witnesses will be omitted.
2. a permanent confidential case file.

F (4) The Dean for Student Life, jointly with the board, is responsible for recruitment, training, supervision, and direction of a staff of advisers available to accused students.

G *Prehearing Procedures.* Upon receipt of a complaint, the Dean for Student Life or duly appointed assistants will:

G (1) promptly assemble and examine all evidence either material or relevant to the allegation in which task the Dean or the Dean's assistant shall enjoy prompt and full cooperation from all parties concerned. This investigatory process may include, but is not confined to:

- a. receipt of any oral and/or written evidence including documents and records.
- b. interviewing the accused which interview must begin with notification by the Dean or assistant of: a right to remain silent, a right to an adviser as defined herein, a right to waive knowingly one or both of these rights as well as a written and signed acknowledgment by the accused attesting to an understanding of these rights (Cf. I(8)(a)).

- c. interviewing any holder of evidence.
 - d. receipt from the accused of a written statement submitted in his or her behalf which document will become part of the case record.
- G (2) promptly determine on the basis of the preliminary investigation whether or not there exists probable cause for believing that the accused person committed the alleged act(s).
- G (3) The Dean for Student Life is responsible for finding of probable cause. In determining whether to prefer charges against any accused, the Dean will consider:
- a. *civil proceedings completed.* If, in the judgment of the Dean for Student Life, any civil or criminal liability the accused may have already incurred by reason of the action of any civil tribunal adequately vindicates the interest of the University in punishment of the accused, the Dean shall not prefer charges against the accused. The Dean shall, however, report to the Judicial Board finding of probable cause and reasons for not preferring any charge.
 - b. *civil proceedings pending.* If any civil or criminal action is pending in any civil tribunal, and in the judgment of the Dean for Student Life, prompt trial before the Judicial Board would be prejudicial and unreasonably burdensome to the accused in respect to the civil tribunal proceedings, notwithstanding the finding of probable cause, the Dean for Student Life may defer preferring any charge. In making this determination, the Dean will consider the nature of the offense, the nature of the defense that may be offered in either the civil or University proceeding, the punishment that may be visited on the accused in either proceeding, the likely delay in the civil proceedings, any possible impairment of the accused's ability to defend him/herself in either proceeding by reason of its contemporaneous pendency and the preservation of general peace and order within the University community. If, after a finding of probable cause, the Dean for Student Life decided either to defer preferring charges or definitely to abandon them in the situations covered by this paragraph, the Dean shall nevertheless report to the Judicial Board his/her findings of probable cause and reasons for deferring or abandoning the preferring of charges.
 - c. *civil proceedings in future.* If any civil or criminal action is threatened or likely, the Dean for Student Life will be governed by the same considerations set forth in paragraph (b.), and in addition by the degree of likelihood of civil or criminal proceedings against the accused. If, after a finding of probable cause, the Dean for Student Life decided either to defer preferring charges or definitely to abandon them, in the situations covered by this paragraph, the Dean shall nevertheless report to the Chairman of the Judicial Board the finding of probable cause and reasons for deferring or abandoning the preferring of charges.
- G (4) In circumstances so warranting under G (3) a.-c. the sanction of interim suspension may be invoked. (See K (13)).
- G (5) *Referral.*
- a. The Dean for Student Life may refer the case to the appropriate agency for resolution if that officer finds that the case, whether or not probable cause exists, falls without the board's jurisdiction.
 - b. At any time prior to imposition of verdict and sanction, any member of a panel may object to further consideration of the case on grounds that

the board lacks jurisdiction. Thereupon the panel must resolve the jurisdictional question raised. If a panel majority believes the board lacks jurisdiction over the case, the proceedings will be suspended, and the matter referred to the Chairman of the Board for subsequent resolution of the question by the full Undergraduate Judicial Board. The decision of a majority of those board members present will be final, and the case will be either retained by the board accompanied by referral back to the original panel or be referred to the appropriate agency for disposition.

G (6) *Terminate action and report this fact if:*

- a. no probable cause is found.
- b. after examination of the Undergraduate Judicial Code and the University Regulations, it is determined that commission of the alleged act does not violate any provision(s) found in the duly promulgated codes, rules, and regulations of the University.
- c. in the event that the Dean for Student Life should refuse or fail for any reason to receive complaints and/or conduct investigations, and/or find probable cause and/or prefer charges, an aggrieved party may appeal such action or inaction on grounds of new or different evidence previously unavailable. This step may be made by filing with the Chairman of the Board a typed petition entitled: "Petition to Find Probable Cause." Upon receipt of this petition, the Chairman of the Board will direct the Dean or will unilaterally appoint an investigator to find facts on the basis of which a full seven (7)-member hearing panel may determine the existence of probable cause sufficient to warrant a regular hearing in due course.

G (7) *Probable Cause Notice: Regular Hearings.* If probable cause is determined to exist, the Dean for Student Life will promptly draw up a written notice to be transmitted to the accused together with a summons to appear for a panel hearing at the time and place specified. The notice will include:

- a. the charges.
- b. text of the relevant provision(s) of the Judicial Code, rules, and regulations.
- c. report of the Dean for Student Life prepared pursuant to G (9).
- d. a statement of procedural rights available to the accused.
- e. any other material which the board may instruct the Dean for Student Life to supply the accused.
- f. the signature of the Dean for Student Life or appointed assistants.
- g. list of members of the panel designated to hear the case.

G (8) *Probable Cause Notice: Administrative Alternative.* Should the Dean for Student Life, after consulting with the Chairman of the Undergraduate Judicial Board, determine that either the nature or related extenuating circumstances of a case render it amenable to the administrative hearings alternative provided for in H(1)9(b.), a written notice will include explicit notice of the availability of such forum to an accused who within seven (7) days of receipt of the notice admits guilt to all specified charges and who signs a waiver of the right to a formal hearing before the Undergraduate Judicial Board.

G (9) Prepare a written report of findings and transmit that report to the appropriate tribunal. This report will contain a copy of the probable cause notice (G (8)), all evidence gathered in the preliminary investigations, with its sources and

statement of the rights of the accused. Nowhere in this report will a personal opinion be expressed as to the merits of any evidence, or as to the guilt or innocence of the accused. However, where there are conflicts in the evidence the Dean will draw the attention of the panel to them. The report shall become a part of the written record of the hearing.

G (10) Subpoena witnesses as directed by the Chairman of the hearing panel.

H (1) *Administrative Hearing Alternatives.*

- a. An accused may request that his or her case be heard by the appropriate Dean of his or her college or school, who may refuse to hear it. If, after consulting with the Chairman of the Undergraduate Judicial Board, the Dean decides to hear the case that officer is bound by the same procedures followed by the Undergraduate Judicial Board and by the penalties specified in Section K of this code.
- b. The Dean for Student Life and/or that officer's appointee or appointees will confer at the earliest convenient time with an accused who has opted for and met the requirements specified in G(8). In fixing the sanction, the Dean or appointee is governed by the penalties enumerated in Section K of the code.
- c. The Chairman of the Board will receive prompt notification of hearings held under *a.* and *b.* above and a copy of the case abstract as defined in J(14)(b.).

I. *Prehearing Procedures.*

I (1) *Charge required.*

- a. No case may be heard by the board in the absence of a finding of probable cause by the Dean for Student Life and a clear statement of the charges against the accused or by direct petition to the board. (Cf. G(7) and G(6)c).
- b. The Dean's signature on the Probable Cause Notice (G (8)) attests to a sufficiency of inculpatory evidence, existence of the board's jurisdiction, and the completeness of the charges.

I (2) *Hearing Schedules.* The hearing, based on contents of the Probable Cause Notice (G (8)) will take place speedily, ordinarily within thirty (30) days following presentation of charges to and signed acknowledgment of their receipt by the accused.

I (3) *Notice.* The accused will be given at least seventy-two (72) hours notice prior to the hearing or prior to continuation of a hearing recessed under J(8) subject to waiver as provided for in I(4).

I (4) *Waiver.* The accused may waive by a signed written statement the notice and/or the seventy-two (72) hour rule with reference to I(3) above and I(11)b) below.

I (5) *Continuances.* Should the accused desire additional time to prepare his or her defense, a petition to that effect may be directed to the Chairman of the Board not less than twenty-four (24) hours prior to the scheduled hearing. In the Chairman's discretion, the accused may be granted a hearing delay of reasonable duration.

I (6) *Contempt.* A willful or deliberate action on the part of the accused to impede, obstruct, unduly delay, or interfere at any stage with, in any manner, the proceedings then or thereafter before or potentially before the board may be

deemed an act or acts in contempt of the board as determined by a majority of the relevant panel after issuance of a "show cause" order and in a separate regular proceeding held notwithstanding failure of the accused to appear in defense. K(12).

I (7) *Removal and Challenges.*

- a. **Voluntary Removal.** Board members may excuse themselves from a hearing panel for any reason (see D(3)).
- b. **Recusal.** No person presenting evidence against the accused may at any time sit in judgement upon the accused.
- c. **Challenges.**
 1. **For Cause.** The accused has the right to challenge on the grounds of prejudice any member of the hearing panel sitting on his/her case. If an accused makes such a challenge, the panel shall deliberate in private to determine whether cause exists. By majority vote of the members of the panel (excluding the member being challenged), a member shall be removed from the case, and replaced by a member of the board designated by the Chairman of the Board.
 2. **Peremptory.**
 - a. In addition, the accused may exercise a peremptory challenge directed at not more than seven (7) panel members even if a new trial on an amended charge is required. (Cf J(8)d).
 - b. At the time the accused is informed of the hearing date, he/she shall be presented with a list of the members of the Undergraduate Judicial Board and of the members of the panel designated to hear the case.
 - c. If the accused wishes to make a peremptory challenge(s), he/she shall make the challenge(s) in writing to the Office of the Dean for Student Life within forty-eight (48) hours of the notification of the scheduled time of the hearing.
 - d. The Office of the Dean for Student Life will transmit this challenge to the Chairman of the Board, who will excuse the panel challenged, and refer the accused to the next panel in rotation.
 - e. The accused retains the right to challenge for cause whether or not he or she has used the seven (7) peremptory challenges except as noted in C(2)b and C(5).

I (8) *Adviser*

- a. **Right to Adviser.** The accused enjoys the right to have an adviser. The Dean for Student Life will assign the accused an adviser at notification of the investigation. The accused may decline the assigned adviser and may select any other member of the University community except members of the board, or the accused may select no one. (G(1)b).
- b. The function of the adviser is to advise the accused in the preparation and presentation of his or her case, but the adviser may not directly address the panel nor any other participants during the formal hearing proceedings.
- c. Witness or witnesses as defined in I(10)a may request the panel chairman to permit the presence of adviser during hearing proceedings under conditions enumerated in I(8)a and b.

I (9) *Role of Accused.*

- a. *Presentation of Case.* The accused enjoys the right and will be advised of the right to produce witnesses (including no more than two character witnesses), introduce documents, and offer testimony in his or her own behalf.
- b. *Testimonial Rights.*
 1. The accused enjoys the right against self-incrimination, the right to remain silent respecting the charges brought against him/her, before, during, and after the hearing. No inference of guilt may be drawn from the silence.
 2. But any evidence pertinent to the charges volunteered by the accused may be used as evidence against him/her.
 3. If the accused elects to offer testimony on a specific act of misconduct, he/she waives a right to continued silence, and must answer truthfully all questions pertaining to the act.
- c. *Examination of Witnesses.*
 1. Under the supervision of the panel chairman, the accused may question directly any witness.
 2. The moving party or the accused, with or without the adviser's assistance, may submit questions in writing to the chairman of the hearing panel or during the proceedings.
 3. The chairman must ask such question(s) so submitted unless they are unfair and/or irrelevant and/or purely capricious.
 4. A copy of the written questions will be appended to the record.

I (10) *Witnesses.*

- a. *Defined:* Any person with direct knowledge relevant to a case pending before the board is a material witness.
- b. *Duty to Appear.* The Dean for Student Life may require the appearance of material witnesses or, upon the written request of the complainant and/or the accused, the Dean will require the appearance of such witnesses.
- c. *Notice to.* The Dean for Student Life will notify such witness(es) in writing of the time, place, and purpose of their appearance as well as of the right against self-incrimination.
- d. *Contempt of.* Willful and deliberate failure and/or refusal of any material witness to honor a subpoena authorized by the board and duly served by the Dean for Student Life or a representative may be deemed an act in contempt of the board.

I (11) *Discovery.*

- a. No extrinsic evidence. In reaching its judgment, a panel will consider only the report of the Dean for Student Life, documents submitted into evidence, and the testimony of: moving party(ies), accused, and witnesses at the hearing.
- b. The accused has the right to examine the written statement of any witness which is relevant to the case at least seventy-two (72) hours prior to either the hearing or continuation of a hearing recessed under J(8) subject to waiver as provided for in I(4).

- c. *Confrontation.* The accused has the right to confront any witness who has given a statement relevant to the pending case.
 - d. *Excuse priority.* Any student whose presence is required at a hearing will be excused from any other University responsibility which might prevent, impair, or delay his/her presence before a panel, and both the board and the Dean for Student Life will employ their good offices to assist such students in making satisfactory arrangements.
- I (12) *Closed Hearings.* The hearing will be closed unless the accused requests an open hearing. If any objection to an open hearing is lodged, the panel will decide the issue by majority vote and, if negative, the accused will receive from the panel a written statement of reasons for rejection of his/her request.
- J *Hearing Procedure.*
- J (1) *Opening.* The Chairman will open the proceedings by noting the date, identity of the party(ies), the charges, and identity of all panel members.
- J (2) *Plea.* The accused will then plead guilty, not guilty, guilty in part and not guilty in part, or move to postpone the hearing for good cause shown.
- J (3) *Report of the Moving Party.* The Chairman will call for a reading of the report on the case compiled and transmitted by the Dean for Student Life. At this time, the Chairman may invite the moving party(ies) to make a statement, not to exceed five (5) minutes, summarizing the essential facts and expressing opinions thereon. At any point prior to this stage of the hearing, the moving party(ies) may decline such invitation.
- J (4) *Case for Accused.* The Chairman of the panel will request the accused to present his or her case. (See I(7)c(1) and I(7)c(2), I(8)b, I(9).) The accused may waive this right by a verbal declaration (See I(9)b.)
- J (5) *Witnesses.*
- a. All witnesses other than character witnesses, will be sequestered at the commencement of proceedings, and will appear before the panel consecutively. But the panel Chairman may suspend this rule and direct attendance of all witnesses in the hearing room providing that the accused consents to this procedure.
 - b. Character witnesses are called first and excused by the Chairman following their testimony.
 - c. The accused may call and direct questions to witnesses as prescribed in I(9)a and c, respectively.
 - d. The panel may call and question witnesses.
- J (6) *Examination of Witnesses.*
- a. Under the supervision of the panel chairman, the accused may question directly any witness.
 - b. The moving party or the accused, with or without the adviser's assistance, may submit questions in writing to the Chairman of the hearing panel before or during the proceedings.
 - c. The Chairman must ask such question(s) so submitted unless they are unfair and/or irrelevant and/or purely capricious.
 - d. A copy of the written questions will be appended to the record.
- J (7) *Evidentiary Rules.*

- a. All evidence which the panel considers relevant will be admitted including hearsay and expressions of opinion.
- b. Wherever possible oral testimony rather than written statements should be presented.
- c. Statements made by unidentified witnesses or those absent at the hearings, neither of which can be confronted by the accused, may not constitute a sole or substantial basis for conviction.
- d. No evidence obtained through unlawful search and seizure or in violation of the *University Statement on the Privacy of Students' Rooms* will be admissible at the hearing.

J (8) *Recess and Termination of Hearings.*

- a. The Chairman may recess hearings for a short duration of time in order to facilitate the work of the panel.
- b. By vote of a majority of the panel members, hearings may be recessed for an extended duration of time in order:
 1. to accommodate extraordinary circumstances such as personal emergencies
 2. to acquire additional evidence or testimony
 3. to provide adequate time for considering and setting sanctions (see: I(3) and I(11)b.)
- c. A witness or accused enjoys the right to a brief recess after a lapse of one (1) hour from commencement of the official record as provided for in J(14)a.
- d. However, no recess may be declared for the purpose of amending the original charges against the accused. If it is determined during the hearing and prior to verdict and judgment that the charges must be amended, the hearing must be terminated without prejudice and the procedures set forth in Section I reinstituted.

J (9) *Status of Accused Pending Verdict and Appeal (Interim Suspension).*

Pending verdict on charges (including appeal) against the accused, the status as a student cannot be changed, nor the right to be on campus or to attend classes suspended, except as provided for by the interim suspension rule (K(13)).

J (10) *Verdict and Sanction.*

- a. After the hearing closes, the panel will consider its verdict and sanction in closed session.
- b. The verdict is a determination of guilt or innocence. A guilty verdict is based on the existence of clear and convincing evidence that the accused committed the act(s) alleged in the charge.
- c. The sanction is a statement of the punishment imposed drawn from those enumerated in Section K below.
- d. Verdict and sanction will be determined by a majority vote of a panel except that any judgment of expulsion (see K(1)) or suspension (see K(2)) must be concurred in by not less than four (4) members of a five (5) member panel nor less than five (5) members of a seven (7) member panel.

- J (11) *Special Master*. At any stage in the proceedings, involving complicated technical or professional subject matter, and at the request of any party or any or all members of a panel, a special master may be appointed by the Chairman of the Board in consultation with the appropriate dean. The special master will render advice to the panel. On the motion of any party or any member of the panel, proceedings may be recessed pending the receipt of the special master's report.
- J (12) *Rehearing*. A panel by a majority vote may decide to rehear a case in which significant new evidence can be introduced in behalf of the accused.
- J (13) *Notification of Verdict and Sanction*.
 - a. The Chairman of the panel will promptly inform in writing the Dean for Student Life of the decision of the panel, but initial notification may be oral followed by the written abstract as required by J(14)b.
 - b. The Chairman of the panel or the Dean shall promptly notify the defendant of the verdict and sanction imposed, and shall, at the same time, inform him or her of rights of appeal.
 - c. At the request of the moving party(ies), the Dean for Student Life may, but is not required to, inform that person or persons of the panel's verdict and/or sanction.
- J (14) *Record*:
 - a. Tapes: A separate tape recording will be made for each hearing, clearly labelled, and retained for three (3) years.
 - b. Abstract: A written abstract of each case will be made by completion of a "Hearing Committee Report Form" signed by the panel chairman.
- K *Sanctions*. The board is empowered to impose singly or in combination penalties of four (4) classes.

CLASS I

- K (1) *Expulsion*. Dismissal and permanent removal from the University without possibility of readmission. University censure automatically applies.
- K (2) *Suspension*.
 - a. Under the voting rules set forth in J(10)d, dismissal from membership in the University for a specified period of time, ordinarily including the current semester and the next succeeding one, and such additional semesters as deemed appropriate by the panel.
 - b. Readmission as a student in good standing is contingent upon satisfaction of any conditions stated in the original sanction.
 - c. Upon reacceptance to and matriculation in the University the student is placed on disciplinary probation K(4) for a specified period of time.
 - d. As suspension constitutes an involuntary withdrawal from the University an entry to that effect is made on the student's permanent academic record for the duration of suspension.
 - e. University censure (class II) may be applied as determined by the panel.
- K (3) *Suspended Suspension*.
 - a. For a specified period of time, the penalty of suspension is imposed, but suspended due to the existence of facts deemed mitigating by a panel.

- b. A disciplinary probation period must run concurrently and may run consecutively with suspension.
 - c. As no involuntary withdrawal actually occurs, no temporary entry to that effect is made on the student's permanent record.
- K (4) *Probation.*
- a. *Disciplinary Probation.* Placing the student on a probationary status for violation of any regulation may result in suspension if adjudged guilty of subsequent infraction.
 - b. *Revocation of Disciplinary Probation.* In the event that a student has been placed on disciplinary probation by the Undergraduate Judicial Board and subsequently is convicted of violation of a regulation by the University Judicial Board, the revocation of his or her probation will not automatically occur. In such a case he or she shall be entitled to a hearing before a panel of the Undergraduate Judicial Board, said hearing being limited to the issue of whether his or her probation should be revoked as the result of the original conviction and the conduct which gave rise to a second conviction.
- K (5) *Exclusion.*
- a. from public participation or performance in the name of the University other than performance of duties as an elective officer.
 - b. from application for, retention of, or any other possession of a University housing license.
 - c. from access to, use of, and occupation of specified University-owned premise and/or facilities.
 - d. from application for, retention of, or any other possession of a traffic and parking permit.
 - e. from application for, retention of, or any other possession of IM privileges.
- K (6)* *Warning.* A formal written admonition but which explicitly states the certainty of more severe disciplinary sanction for conviction of a subsequent violation during a stated period. A warning may be entered on the student's Dean's card citizenship record at the discretion of a panel.
- K (7) *Restitution.* Payment for all or a portion of injury or damages to person(s) or property caused by commission of an offense.
- K (8)† *Fine.* Payment to Duke University of a reasonable sum of money set by a panel which may also impose a community service sanction as provided for in K(9)a or b below.
- K (9) *Community Service.* Specified hours of service set by a panel during which period a student will perform as either
- a. a regular employee in the University student labor pool, or
 - b. a "volunteer" worker in a charitable enterprise in Durham city or county as arranged for and supervised by the Dean for Student Life.

CLASS II

- K (11) *University Censure.*

*1982 revision.

†1983 revision of substance.

- a. Official entry on a student's permanent record, of serious misconduct including both the fact of the censure and the exact nature and circumstances of the offense.
- b. This sanction is never applied unless in combination with serious offenses meriting imposition of sanction K(1)-(2). Censure indicates the seriousness of the offense and the absence of mitigating circumstances.
- c. Application of this sanction requires a separate vote of a panel under J(10)d unless accompanying Expulsion K I(l).

CLASS III

K (12) *Contempt*. Exclusion from registration, enrollment, or matriculation at the next ensuing semester, including semesters of summer session or eligibility to graduate from Duke University pending relief from verdict and sanction by compliance in good faith with the original order, directive or subpoena. This penalty is ordinarily used in contempt proceedings described in I(6) and I(10)d.

K (13) *Interim Suspension*.

- a. An extraordinary remedy invoked only in extreme cases requiring immediate action prior to a panel hearing.
- b. If the Dean for Student Life deems any student's presence on campus, at any time to constitute a threat to the general peace and order of the University community and to its several members that officer may so notify the Provost or Chancellor, who may, in his or her discretion, suspend the named student from the University for a three (3)-day period pending a hearing before a duly constituted panel of the board.
- c. If the student or board requires a continuance the interim suspension may be extended by the Provost or Chancellor or by a duly constituted panel of the board.
- d. If interim suspension is imposed and the accused is later found innocent, the University will grant restitution as provided by the Undergraduate Judicial Board with respect to that student's academic responsibilities incurred during the period of suspension.

K (14) *Temporary Restraining Order*.

- a. A formal written ex parte order issued by a duly constituted panel or the Chairman of the Board directing a named actor(s) to cease and desist from engaging in behavior deemed contrary to one or more provisions of the Undergraduate Code. (See I(6) and K(12)).
- b. Such TROs are of twenty-one (21) days duration but are renewable only through regular panel proceedings.

CLASS IV

K (15)**Counseling Recommendation*. If a panel majority believes that a student would benefit from professional counseling, it may recommend such action to the Dean for Student Life who may so advise the student.

L *Appeal*.

L (1) *Right of Appeal*.

- a. Appellant may appeal any verdict and sanction of the board to the dean of the relevant undergraduate college or school in any case involving

academic dishonesty. In all cases involving infractions other than academic dishonesty appellant may appeal the verdict and sanction of the board to the Vice-President for Student Affairs.

- b. The dean or Vice-President may delegate further consideration of an appeal to an appropriate member of his or her staff.
- L (2) *Form and Time of Notice to Appeal.* Notice of appeal must be in writing and submitted to the relevant dean, unless waived by him, within forty-eight (48) hours after receipt of the verdict and judgement.
- L (3) *Form and Time of Actual Appeal.* A written statement clearly and briefly setting forth grounds for appeal must be submitted to the relevant dean, unless waived by the officer within seven (7) days after receipt of the verdict and sanction.
- L (4) *Exclusive Grounds for Appeal.*
 - a. Procedural error substantially affecting the rights of the accused.
 - b. Incompatibility of the verdict with the evidence.
 - c. Excessive penalty not in accord with "current community standards."
 - d. New evidence of a character directly affecting the verdict but on which basis rehearing was denied by the board.
 - e. Error in applying or interpreting the rule under which the case was originally tried.
- L (5) *Appeal Procedures.*
 - a. The relevant administrative officer of the University may not hear testimony *de novo*.
 - b. He/she shall receive documents submitted by the panel including tapes, abstracts, written opinions, and dissents.
 - c. The appellant may prepare for his/her defense with the assistance of an adviser and may at his/her expense make a transcription of the tape.
 - d. The appellant must submit a written statement setting forth grounds for his/her appeal as required by L(3) and the supporting arguments.
 - e. The appellant has a right to make an oral statement to the dean to amplify his/her written arguments. The administrative officer may question the defendant at this time about his/her oral statement or written statement, but shall confine himself or herself to the issues on appeal. These additional statements and arguments shall be recorded.
 - f.* Either the chairman of the relevant hearing panel or the administrative officer charged with responsibility for hearing the appeal may request a conference between themselves to consider issues arising out of the case. A notation of such conference shall likewise be incorporated in the record.
 - g. With the consent of appellant, the administrative officer may consult with such other members of the University community as he/she chooses concerning disposition of the appeal.
- L (6) *Appeal to President.* The appellant may appeal an unfavorable decision of the administrative officer to the President of the University who may, in his or her discretion entertain such appeal, under such conditions and with such procedures as he or she may prescribe. The President will notify the Board Chairman of the decision.

procedures as he or she may prescribe. The President will notify the Board Chairman of the decision.

L (7) *Notification.*

- a. In all cases the relevant administrative officer or President of the University will submit to the Chairman of the Board, with a copy to the Dean for Student Life a written statement of the decision and reasoning on which it is based.
- b. Such administrative officers will promptly communicate their decision to the appellant.
- c. At the request of the moving party(ies) the Dean for Student Life may, but is not required to inform that person or persons of the outcome of the appeal.

M *Amendment of Article IV.*

M (1)‡ Article IV, "The Undergraduate Judicial Board," may be amended at any time by the Vice-President for Student Affairs only on the recommendation of a permanent Advisory Committee on Judicial Codes composed of undergraduates, faculty, and deans appointed by and acting under that officer's supervision and direction.

M (2)† All amendments promulgated by the Vice-President for Student Affairs shall be effective from and after the date of promulgation.

‡1983 revision of form.

Appendix D

The Residential Judicial Code

Preamble

A basic part of living in the Duke undergraduate community is every member's recognition of and maintenance of those factors which support and foster a harmonious residential life. Among them are: (1) a living situation conducive to and supportive of academic pursuits, (2) privacy, (3) maturity and responsibility of both individuals and living groups, (4) security, (5) financial responsibility, (6) individual and group freedom of life style that does not infringe upon the liberty of other individuals or living groups, (7) an atmosphere of discretion and consideration regarding personal matters.

In recognition of the responsibility of each undergraduate to adhere to these fundamental rights of all the duties of each, the University and its student-operated institutions treat every person as a mature individual. And the University accords recognized residential living groups certain privileges including: (1) priority use of a residential section, including commons room areas, (2) priority of its members with regard to room selection within the section, (3) use of University facilities, (4) loan privileges from the University, (5) the use of University purchasing channels.

In the event of conflicts arising within the undergraduate community, impartial institutions exist for their peaceful resolution with due regard for the rights, privileges, and duties of each member or several members of the Duke residential community.

Article I: The Residential Judicial System:

The Residential Judicial System includes those of the several residential units and consists of (1) such committees, councils, or boards composed of elected or appointed resident members and constituted for a single unit or for more units than one as may exist or be subsequently established to adjudicate conflicts, (2) the Interfraternity Council Judicial Board (IFCJB), and (3) the Residential Judicial Board with campus-wide adjudicatory power as defined below. The system's jurisdiction includes conflicts in "the Judicial Code of the Undergraduate Community" in this bulletin at pp. 38-40 but which fall outside the jurisdiction of the University and Undergraduate Judicial Boards as well as those related to relevant provisions of the "Care of Dormitory Rooms and Adjacent Campus Areas," "House Dues Policy," "Violation of Housing License," and "University Policies and Regulations" in this bulletin at pp. 42-55.

Article II: House Judicial Systems

- A. Each residential unit may establish a suitable organization for adjudication of intra-unit conflicts.
- B. Such organization must establish and promulgate procedures for processing its business.
- C. Any resident(s) of such unit may bring a case before the organization as established and the Dean for Residential Life may refer cases to it.
- D. The house adjudicatory organization may refer any case within their cognizance to the Dean for Residential Life for reference to the IFC, the Residential or Undergraduate Judicial Board [see M(2)(3)].
- E. The following penalties may be imposed:
 1. Censure
 2. Fine
 3. Restitution

4. Exclusion from social activities
 5. Forfeiture of room drawing priority
 6. Recommendation to the Residential Judicial Board of cancellation of room contract.
- F. Every judgment of any house adjudicatory organization will be filed with the Dean for Residential Life within 24 hours of its release. The Dean will thereafter certify that judgment as a final disposition of the case or direct, on petition of the original aggrieving party or on the Dean's own motion, that the Residential Judicial Board hear it as an appeal.
- G. If a house adjudicatory organization fails to enter a judgment in any case within twenty-one (21) calendar days after receiving it, the Dean for Residential Life may transfer that case to the Residential Judicial Board.

Article III: Upperclass Housing Association Judicial Board (UHAJB)

- A. Two or more nonfraternity upperclass residential units may establish a common organization for adjudication of conflicts: (1) between and among such residential units, (2) between and among residents thereof, and (3) between residential units and residents.
- B. The organization and procedures of the UHAJB will be analogous to those provided for the IFCJB in Article IV below.

Article IV: Interfraternity Council Judicial Board (IFCJB)

- A. Fraternity units may establish an Interfraternity Council Judicial Board with such organization and procedures as provided for in the Constitution and By-Laws of the Interfraternity Council which are consistent with the provisions of this Article.
- B. Any member of a fraternity unit may bring a case before the IFCJB and the Dean for Residential Life may refer cases to it.
- C. The IFCJB will enjoy exclusive original jurisdiction in cases which involve only (1) Fraternity units and their members, (2) Property belonging to either or both, and (3) Interests affecting either or both. Included are:
 1. rush and pledge rules and regulations.
 2. "hazing" as defined in this bulletin at p. 50
 3. damage to off-campus private, real, or personal property.
 4. actions between and among fraternity residential units, between and among fraternity members, and between fraternity residential units and fraternity members.
- D. In all other cases involving fraternity residential units the board is eligible to obtain jurisdiction of a case(s) under the following procedure.
 1. The Dean for Residential Life notifies in writing the Chairman of the IFCJB that one or more named fraternity residential units are parties to the case.
 2. Within three (3) class days (72 hours) of receipt of notification of the IFCJB Chairman, files with the Dean for Residential Life a petition advancing grounds for referring the case(s) to the board for adjudication in the first instance.
 3. The Dean for Residential Life at his or her discretion, consistent with the "important case" criteria set forth in N(2), determines that the case(s) should be referred to the IFCJB.

- E. The following penalties may be imposed:
1. Censure
 2. Fine
 3. Restitution
 4. Community volunteer services performed under the supervision and direction of the Dean for Residential Life.
 5. Suspension or probation for a specified time period from one or more enumerated activities cosponsored, sponsored, or performed by a fraternity residential unit made as a recommendation to the Dean for Residential Life.
 6. Suspension or revocation of the privilege of a fraternity residential unit to exist at Duke University made as a recommendation to the Dean for Residential Life.
- F. Temporary restraining orders of twenty-one (21) days duration, renewable by action of the IFCJB, may be issued ex parte by that Board directing named executive officers of a fraternity residential unit(s) and/or named member(s) thereof to cease and desist from specific action within the board's jurisdiction. Noncompliance with such order constitutes contempt of the IFCJB. That board may refer the case directly to the Dean for Residential Life with a recommendation for action by Undergraduate Judicial Board.
- G. Every judgment of the IFCJB will be filed with the Dean for Residential Life within 24 hours of its release. The Dean will thereafter certify that judgment as a final disposition of the case or direct the Residential Judicial Board to hear it as provided for in Section H below.
- H. A judgment of the IFCJB may be appealed to the Residential Judicial Board by the original aggrieving party or, in exceptional circumstances, by the Dean for Residential Life.
- I. If the IFCJB fails to enter a judgment in any case within twenty-one (21) calendar days after receiving it, the Dean for Residential Life may transfer that case to the Residential Judicial Board.
- J. The IFCJB may refer any case within their cognizance to the Dean for Residential Life for reference to the Residential or Undergraduate Judicial Board [See N(2)(3)].

Article V: The Residential Judicial Board

- A. A Residential Judicial Board (RJB) is established.
- B. *Size.* The board is composed of fourteen (14) undergraduate members.
- C. *Terms.* These members will serve one (1) year terms but for not more than two (2) consecutive one (1) year terms. After two (2) consecutive one (1) year terms, incumbent members of the board may reapply for continued service on the board under procedures specified in IV(D).
- D. *Selection.* Solicitation for membership will be by public notice. Interested applicants from all classes except graduating seniors will submit written statements indicating their interest in an appointment to the board. From among these applicants, the nonreturning members of the board augmented by one (1) representative of the undergraduate student government, appointed by that government's Executive Committee, will constitute a selection committee of not less than three (3) members. The Executive Committee of the student government will appoint

- sufficient members of the committee to constitute at least a membership of three in the event that there exists fewer than two (2) nonreturning board members.
- E. (1) The Selection Committee may interview all, but must interview at least two (2) candidates for each vacancy on the board unless there are fewer than two (2) such candidates available. (2) In making the appointments, consideration should be given by the committee to providing a board broadly representative of the Duke undergraduate residential community.
 - F. All members so selected must be duly approved by the student legislature.
 - G. *Interim Vacancies.* Interim vacancies may be filled for the remainder of the academic year, by a majority vote of all members of the board.
 - H. *Removal.* Removal of any member for cause requires a two-thirds majority of all board members. Such an interim vacancy must be promptly filled.
 - I. *Organization.* The board will elect a Chairperson, a Vice-Chairperson, and a Secretary. The Secretary will keep permanently filed minutes of all actions of the board.
 - J. *Reports.* The proceedings and decisions of the board are ordinarily confidential matters [see P(3)]. However, the board in its discretion may issue general policy statements related to a specific class or classes of a case or cases previously adjudicated *and* at least once a year or more often as determined by the board, a public statistical report must be issued on business conducted during the preceding time period.
 - K. *Quorum.* Five (5) members of the board may, in its discretion, adjudicate cases involving money amounts aggregating less than \$25, by instituting publicly known procedures using fewer than five (5) members.
 - L. *Voting.* Final decisions of the board are to be made by a simple majority vote. The chair may vote only in the case of a tie.
 - M. *Jurisdiction.* The board has jurisdiction over all disputes arising in residential unit(s) which are not within the jurisdiction of the University Judicial Board or Undergraduate Judicial Boards [but note M(3) below]. Its jurisdiction includes:
 - 1. all appeals from judgments rendered by any house or other duly constituted judicial board provided for in Articles II, III, or IV.
 - 2. original jurisdiction in the absence of a house judicial system as defined in Article II and as set forth in N(1) below.
 - 3. violation of the Judicial Code of the undergraduate community (see this bulletin, pp. 38–40) by residential units or by other cohesive units or by unnamed members thereof.
 - 4. noise abatement. [See *Noise* 1(c)(d).]
 - 5. claims relating to damage to, destruction of, or theft of private, real or personal property located on or off the premises of Duke University.
 - 6. monetary assessments. [See “House Dues Policy” in this bulletin.]
 - 7. any of the above or other disputes affecting the general peace and order of the Duke community, not subject to Undergraduate Judicial Board jurisdiction between:
 - a. different living groups
 - b. individual student(s) of different living groups

- c. individual student(s) of one living group and a different living group(s)
 - d. an individual or group of individuals and their own living group
8. charges of contempt against any student or residential unit which has acted to impede, obstruct, delay, or otherwise interfere with the proceedings or judgment of the Residential Judicial board.

N. *Presentation and Referral of Cases.*

1. Any aggrieved undergraduate or group(s) of undergraduates, who or which has/have previously made reasonable and good faith efforts to resolve a dispute through utilization of other existing remedial procedures, may petition for a board hearing of an issue properly within the board's jurisdiction, either directly or through the Office of the Dean for Residential Life.
2. The Dean for Residential Life or a duly authorized agent/appointee may, on his/her own initiative or on the recommendation of others, including but not restricted to an aggrieved party or parties, resident advisers, faculty members, the Undergraduate Judicial Board, law enforcement officers, and officials of Duke University, present directly to the board important cases properly within its jurisdiction.
3. The Residential Judicial Board may refer, at any time, cases to the Dean for Residential Life with a recommendation that proceedings be initiated pursuant to the jurisdiction of the Undergraduate Judicial Board.

O. *Sanctions.* The Residential Judicial Board may impose the following sanctions:

1. censure
2. reprimand
3. specified or general probation for a fixed time period
4. restitution
5. fine
6. forfeiture of room drawing priority
7. cancellation:
 - (a) of room license
 - (b) of campus traffic and parking permit with or without refund of fee
8. suspension for a specified time period of one or more enumerated activities cosponsored, sponsored, or performed by a residential unit or units or by any other cohesive unit or units.
9. recommendation to the Dean for Residential Life that the privilege of a residential unit or units or of any other cohesive unit or units to exist at Duke University be suspended or revoked.
10. community service for specified hours set by the board during which period a student will perform as either:
 - (a) a regular employee in the University Student Labor Pool or
 - (b) a "volunteer" worker in a charitable enterprise in Durham city or county as arranged and supervised by the Dean for Residential Life
11. *ex parte* order of the board issued to any subject within the board's jurisdiction enjoining from and directing to cease and desist from continuing to cause,

causing or threatening to cause any dispute(s), disorder(s), damage(s), or any other act(s) within the jurisdiction of the board [See P(8)(d)]

P. *Procedures.*

1. *Notice and Hearing.* The parties involved must receive timely written notice of the charges levied as well as the time, date, and place of the hearing and composition of the board. At the hearing, they may present evidence and confront and examine witnesses.
2. *Speedy Hearing.* The hearing of all charges shall normally take place within ten class days following the presentation of the charges to the parties involved. However, upon the written request of either party, a continuance of reasonable duration may be granted by the board for good cause.
3. *Hearings Closed.* The hearing will be conducted in private unless all parties involved in concurrence with the Residential Judicial Board request an open hearing.
4. *Right to Adviser.* Each of the parties involved may be assisted by an adviser of his/her choice from the University community. However, the adviser may address no party other than the advisee.
5. *Conflict of Interest.* No interested party may sit in judgment upon a case.
6. *Challenges.* The parties involved shall have the right to challenge on the grounds of prejudice any member of the board not less than twenty-four (24) hours prior to the scheduled hearing. The Chairman may, in his or her discretion, expeditiously grant the challenge and accordingly reconstitute the board. If the Chairman refuses or fails to act affirmatively toward the challenge or is the one actually challenged, the board shall deliberate in private to determine whether cause exists. By a majority vote of the members of the board (excluding the member against whom the challenge is made), that member shall be removed from the case, provided that the parties involved may not exercise a challenge directed at the entire Residential Judicial Board.
7. *Discovery and Evidence.*
 - (a) The party(ies) involved are entitled to examine all documents and other tangible evidence submitted in conjunction with a case at least seventy-two (72) hours prior to a hearing.
 - (b) Depositions, reports, statements, or other written material may be introduced at the hearing, but may not serve as conclusive evidence for any judgment rendered by the board.
8. *Witnesses and Others.*
 - (a) A material witness before the board is defined as a person or persons who has(have) been served with and directed by a written summons, issued by the Dean for Residential Life or by that officer's designee [see N(1)(2)], to appear before the board at a specified time and place for the purpose *and* who either (1) has or may have direct knowledge of a case(s) under the board's consideration or (2) is an officer of a residential or other cohesive unit against which a complaint has been lodged [e.g., under M(3)].
 - (b) In the absence of a material witness *other than* the alleged offending party(ies), the case must either be remanded to the Dean for Residential Life or dismissed.
 - (c) Any person whose presence is required by the Residential Judicial Board shall be excused from any other University responsibilities which would

conflict with his/her presence before the board. The appropriate dean will notify all concerned parties of the excused absence.

- (d) Failure of any person to comply with a summons or otherwise deliberately to impede, obstruct, unduly delay or to interfere at any state with, in any manner, the proceedings of the board may be deemed an act or acts in contempt of the board if, following issuance to the contemner of a "show cause" order conforming with procedures provided in Section P(1)(2), a majority of the members present is determined. Accompanied by supporting material [see P(13)] the case of a person cited for contempt will be promptly referred by the Chairman to the Undergraduate Judicial Board in accordance with the procedure in Section N(3).
 - (e) Other persons with an interest in the proceedings and who may be affected by a decision of the board in a specific case or cases may be admitted to the proceedings and be seated as determined by the board.
- 9. *Right of Confrontation.* A party or parties before the board is(are) entitled to confront and ask questions of any person(s), including those specified in N(1) and N(2), qualified to be designated as material witnesses and who, for such purpose, are so designated P(8)(a).
 - 10. *Self Incrimination.* Anyone who appears before the board enjoys a right to avoid self incrimination.
 - 11. *Judgment.* In reaching its decision the board shall consider only those documents submitted into evidence and the testimony of witnesses given at the hearing.
 - 12. *Notification of Judgment.* In cases coming before the Residential Judicial Board, the Chairman of the Board shall promptly communicate orally the board's decision to the parties involved.
 - 13. *Written Decision.* Within seven (7) class days, the Chairman or his/her designee will transmit to the parties and to the Dean for Residential Life a written decision. It will contain a brief statement of the facts of the case, the board's jurisdictional basis, the judgment, and the reason(s) therefore. The Dean's copy will be retained in a permanent file.
- Q. Decisions of the Residential Judicial Board are final unless appealed to the Dean for Residential Life within nine (9) class days of the written decision. Grounds for appeal are limited to:
- 1. procedural error substantially affecting the rights of the parties involved.
 - 2. verdict not supported by the weight of the evidence.
 - 3. excessive penalty not in accord with "current University community standards."
 - 4. new evidence of a character directly affecting the verdict, but on which the original tribunal had refused a new hearing.
 - 5. error in applying or interpreting the rule under which the case was originally tried.
- R. *Administrative Hearing Option.*
- 1. With the concurrence of all parties involved, a case may be initially presented to the Dean for Residential Life who may, in his/her discretion, hear it. Or that Dean may refuse to hear it and either refer the case to another Dean or remand the case to the Residential Judicial Board in accordance with N(1).

2. If the Dean decides to hear the case he/she is bound by the same procedures which bind the Residential Judicial Board except in procedures involving majority decisions. These decisions will be made by the Dean using his/her discretion.
3. The Dean shall have the authority to give any of the penalties specified by the code.
4. The Dean may not be subjected to a challenge, as otherwise authorized by Section P(6) above.

S. *Amendment.*

1. Amendment of the organization, jurisdiction, procedures, and sanctions in the residential judicial system may be recommended to the Vice-President for Student Affairs of the University at any time by the duly constituted Advisory Committee on Judicial Codes.
2. Such recommendation may be further considered by and subsequently promulgated by the Vice-President for Student Affairs and shall be effective from and after the date of promulgation.

Appendix E

PICKETS, PROTESTS, AND DEMONSTRATIONS

Statement of Policy. Duke University respects the right of all members of the academic community to explore and to discuss questions which interest them, to express opinions publicly and privately, and to join together to demonstrate their concern by orderly means. It is the policy of the University to protect the right of voluntary assembly, to make its facilities available for peaceful assembly, to welcome guest speakers, to protect the exercise of these rights from disruption or interference.

The University also respects the right of each member of the academic community to be free from coercion and harassment. It recognizes that academic freedom is no less dependent on ordered liberty than any other freedom, and it understands that the harassment of others is especially reprehensible in a community of scholars. The substitution of noise for speech and force for reason is a rejection and not an application of academic freedom. A determination to discourage conduct which is disruptive and disorderly does not threaten academic freedom; it is rather, a necessary condition of its very existence. Therefore, Duke University will not allow disruptive or disorderly conduct on its premises to interrupt its proper operation. Persons engaging in disruptive action or disorderly conduct shall be subject to disciplinary action, including expulsion or separation, and also charges of violations of law.

Rule. Disruptive picketing, protesting, or demonstrating on Duke University property or at any place in use for an authorized University purpose is prohibited.

Hearing and Appeal. Hearing Committees will be appointed by the Executive Committee of the Academic Council to judge initially and expeditiously all cases involving students which arise under the regulations that pertain to pickets, protests, and demonstrations. The Hearing Committees are to be regarded as a temporary arrangement subject to re-examination after the report of the Committee on Judicial Procedures is at hand.

A Hearing Committee will consist of two faculty members, one dean, and two students. These students will be selected from members of the judicial boards or governments in the undergraduate, graduate, or professional colleges or schools. The Chairman of the Hearing Committee will be designated by its members.

The Hearing Committee will conduct its proceedings in accordance with academic due process.

The decision of the Hearing Committee shall be final if the accused is exonerated or if there is no appeal. In other cases appeal may be taken to the President, in which case such appeal shall be solely on the record of the proceedings before the Hearing Committee. Argument on appeal shall be written submission, but the President may in addition require oral argument.

The procedures for faculty members will follow the arrangements provided under the *Personnel Handbook*.

Amendments. These regulations on pickets, protests, and demonstrations may be changed or amended by the University at any time but any such change or amendment shall be effective only after due notice or publication. These regulations supersede any regulations heretofore issued on the subject.

Appendix F

RULES GOVERNING DRUG VIOLATIONS

I. Rules governing drug violations at Duke University are as follows.

1. Alleged violations of the policy stated in the first paragraph of the drug policy on page 52 will be adjudicated by the Undergraduate Judicial Board or appropriate deans, or in the case of nonstudents, by comparable authorities and their appointed delegates. It is expected that professional judgment will be exercised in referring indicated cases to University health and counseling services in keeping with the second and third paragraphs of the policy on page 52.
2. The two grounds which may constitute occasion for the assessment of penalties are:
 - a. conviction of a member of the University on a drug charge by a court of law.
 - b. a finding with the appropriate University tribunal, in conformity with the principle of due process, of sufficient evidence that a member of the University has violated the drug policy.
3. The maximum penalty to be imposed within the University upon a student for possession or use of marijuana shall be suspension; for the possession or use of other illegal drugs, or the distribution of any illegal drug, the maximum penalty of the University is expulsion. Other members of the University shall be liable to appropriate comparable penalties.

II. Rules governing drug violations of student athletes at Duke University are as follows.

Duke University prohibits drug use by its student athletes. Prohibited drugs will include anabolic steroids and other performance-enhancing drugs, narcotics and other illegal drugs, and any other drug banned by the National Collegiate Athletic Association (NCAA) legislation. The NCAA requires every student athlete to consent to be tested for prohibited drug usage. But, unlike some other institutions, Duke University will not impose drug testing on all student athletes. To do so would unfairly single out a group of students who are no more likely to use drugs than any other group of students and could contribute to the perpetuation of unfortunate and inaccurate stereotypes.

Duke University will not require any student athlete to submit to testing except (i) in compliance with NCAA regulations for NCAA championships and postseason football contests; or (ii) where a coach or the Director of Intercollegiate Athletics has a reasonable and articulable suspicion that the student athlete has used a prohibited drug. In the event that a coach or the athletic director has a reasonable and articulable suspicion that a student athlete has used a prohibited drug and requests that the student athlete submit to testing, the student athlete who refuses to undertake the test, or tests positively for a prohibited drug, may be denied permission by his or her coach to represent the University in intercollegiate events or participate in team practices. The student athlete also may be subject to additional sanctions, including loss of athletically-related financial aid for subsequent semesters. Any student athlete dissatisfied with a determination to reduce or cancel his or her financial aid will have an opportunity to appear at a hearing before and appeal such a determination to the Academic Committee of the Athletic Council.

Testing will be performed in the University's Medical Center Laboratories. A positive test will be repeated to ensure accuracy where it is practicable to do so.

Duke University is committed to a policy of helping any student athlete who recognizes that he or she has a drug problem and asks for help. The first time a student athlete voluntarily seeks help for a drug problem, the appropriate official in the athletic department will provide confidential counseling or other assistance required by the student athlete, including medical and drug rehabilitation assistance at the University's expense. Unless medically indicated, a first-time drug user will remain eligible to represent the University in intercollegiate events and participate in team practices. His or her coach will not be informed of the drug problem.

If drug use recurs, and a student athlete again voluntarily seeks help for a drug problem, the appropriate official in the athletic department will endeavor to assist the student athlete. The matter will be brought to the attention of the Director of Intercollegiate Athletics. The athletic director may determine in his discretion whether medical and drug rehabilitation assistance sought or needed by a repeat user should be paid for the University; whether the student athlete will remain eligible to represent the University in intercollegiate events or participate in team practices; whether the student athlete's coach will be informed of the drug problem; and whether the student athlete will be subject to additional sanctions, including loss of athletically-related financial aid for subsequent semesters.

Staff members and others employed by the athletic department who have knowledge of the use of a prohibited drug by a student athlete are under an affirmative duty to report such usage to the student athlete's coach or the athletic director.

The effective date of this policy is July 1, 1986. Each student athlete of Duke University will receive a copy of this policy annually.

Appendix G

DUKE UNIVERSITY REGULATIONS CONCERNING PAYMENTS OF ACCOUNTS

Basic University policy requires that tuition and mandatory fees be paid in full prior to the beginning of each semester whether an invoice has been received or not. As part of the agreement of admission to Duke University, a student is also required to pay all monthly invoices for any additional charges as presented. Two tuition payment plans will offer an alternative for payment of a portion of the charges billed each year. The *Multiple Payment Plan* provides an opportunity to pay tuition, room, and

board in nine (9) installments. The *Guaranteed Tuition Plan* (freshmen only) finances and guarantees the amount and rate of tuition for four (4) years through forty-four (44) equal installments (seven [7] semesters through thirty-nine [39] installments for January freshmen) financed at 11 1/2 percent interest. If full payment or arrangement for payment through the two plans is not received, a penalty charge as described below will be assessed on the next monthly invoice and also certain restrictions as stated below will be applied.

Late Payment Penalty Charge. If the "Total Amount Due" on an invoice is not received by its due date, the next invoice will reflect a penalty charge of 1 1/4 percent per month assessed on the past due balance regardless of the number of days past due. The "Past Due Balance" is defined as the previous balance less any payments and credits received on or before the due date and also less any student loan memo credits related to the previous balance which appear on the invoice.

Restrictions. An individual will be in default of this agreement if the "Total Amount Due" on the student invoice is not paid in full by the invoice due date. An individual who is in default will not be allowed to register for classes, receive a transcript of academic records, have academic credits certified, be granted a leave of absence, or have a diploma conferred upon graduation. In addition, an individual in default may be subject to withdrawal from school.

Appendix H

STUDENT HEALTH GRIEVANCE PROCEDURE

Duke Student Health provides a patient advocacy service as part of its health education program. Students who become patients are encouraged to use this service if they have difficulty negotiating the health care system in order to receive timely and satisfactory care. A staff health educator and the Assistant Director of Student Health serve students in an advocacy role. If complaints are in need of further resolution, students can pursue a grievance procedure, designed by the Student Health Advisory Committee (SHAC) in order to facilitate satisfactory resolution of complaints regarding the services rendered.

Procedure—Phase I. Any Duke student who feels he or she has a legitimate complaint with regard to services rendered by the Student Health Program is to obtain and complete the grievance form found in the ASDU office and the Dean for Student Life's office. This is to be returned to the Dean for Student Life within seven (7) days of the event.

One copy of the grievance form will go to the Director of Student Health and another to SHAC. After appropriate investigation, the Director of Student Health shall respond to the student in writing, with a copy of the response to SHAC. The event will be discussed by SHAC and a SHAC member will contact the student to be sure he or she is satisfied with the process and outcome. Copies of the grievance form and response will be kept on file with the Director of Student Health. Confidentiality will be maintained throughout the process, with the student's identity being protected.

Procedure—Phase II. If the student is not satisfied with the outcome of the procedure, he or she will be asked to submit a statement explaining why.

SHAC will discuss the event and respond to the student.

Procedure—Phase III. If the student is still displeased, all of the above forms (grievance form, response, Phase II letter, SHAC response) will be sent to the Vice-President for Student Affairs, and the Chairman of the Department of Community and Family Medicine.

Telephone Numbers Frequently Used

ADMISSIONS	684-3214
ASDU	684-6403
Belvin, James—Director of Undergraduate Financial Aid	684-6225
BRYAN CENTER INFORMATION DESK	684-2323
Bryan, Virginia—Assistant Dean/Natural Science/Trinity College	684-6536
Bryant, Martina—Assistant Dean/Social Science/Trinity College	684-2075
BURSAR	684-3531
Cahow, Clark—Registrar	684-3146
Coon, Susan—Director of the Office of Cultural Affairs	684-5578
COUNSELING AND PSYCHOLOGICAL SERVICES	684-5100
Cox, Richard—Dean/Residential Life	684-6313
CULTURAL AFFAIRS	684-5578
Dowell, Earl—Dean of the School of Engineering	684-2214
Eisenson, Howard—Director of Student Health	684-6721
Eldridge, Albert—Associate Dean/Trinity College	684-2115
EMERGENCY	911
ENGINEERING, SCHOOL OF	684-2214
FINANCIAL AID	684-6225
Friedrich, John—Chairman of Department of Health, Physical Education, and Recreation	684-2202
Griffith, William—Vice-President for Student Affairs	684-3737
HOUSING MANAGEMENT	684-5226
HEALTH, PHYSICAL EDUCATION, AND RECREATION	684-2202
INTERNATIONAL HOUSE	684-3585
Lattimore, Caroline—Dean/Minority Affairs	684-6756
McDowell, Homai—Director of the Office of Student Activities	684-2163
MINISTER TO THE UNIVERSITY	684-2177
MINORITY AFFAIRS	684-6756
Moorman, Jane Clark—Director of Counseling and Psychological Services	684-5100
Nathans, Elizabeth—Assistant Dean/Freshman, Trinity College	684-6217
Nijhout, Mary—Assistant Dean/Adviser for Health Professions/Trinity College	684-6903
O'Connor, Patricia—Director of Placement Services	684-3813
PAGE BOX OFFICE	684-4059
Phelps, Jake—Director of University Union	684-2911
PLACEMENT SERVICES	684-3813
PUBLIC SAFETY	684-2444
RESIDENTIAL LIFE	684-6313
Shepard, Marion—Associate Dean/Engineering	684-2214
Silver, Brian—Director of International House, International Adviser, and Assistant Dean/Trinity College	684-3585
Starnes, Marian—Bursar	684-3531
STUDENT ACTIVITIES	684-2163
STUDENT AFFAIRS	684-3737
STUDENT HEALTH	684-6721
STUDENT LIFE	684-6488
Thomason, Fidelia—Director of Housing Management	684-5226
TRINITY COLLEGE	684-3465
UNION	684-2911
Wasiolek, Suzanne—Dean/Student Life	684-6488
White, Richard—Dean of Trinity College and of Arts and Sciences	684-3465
Willimon, William—Minister to the University	684-2177
Wilson, Gerald—Assistant Dean/Social Sciences/Prelaw Advisor (Trinity College)	684-2865
Wittig, Ellen—Assistant Dean/Humanities, Trinity College	684-5585
EMERGENCY — 911	

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